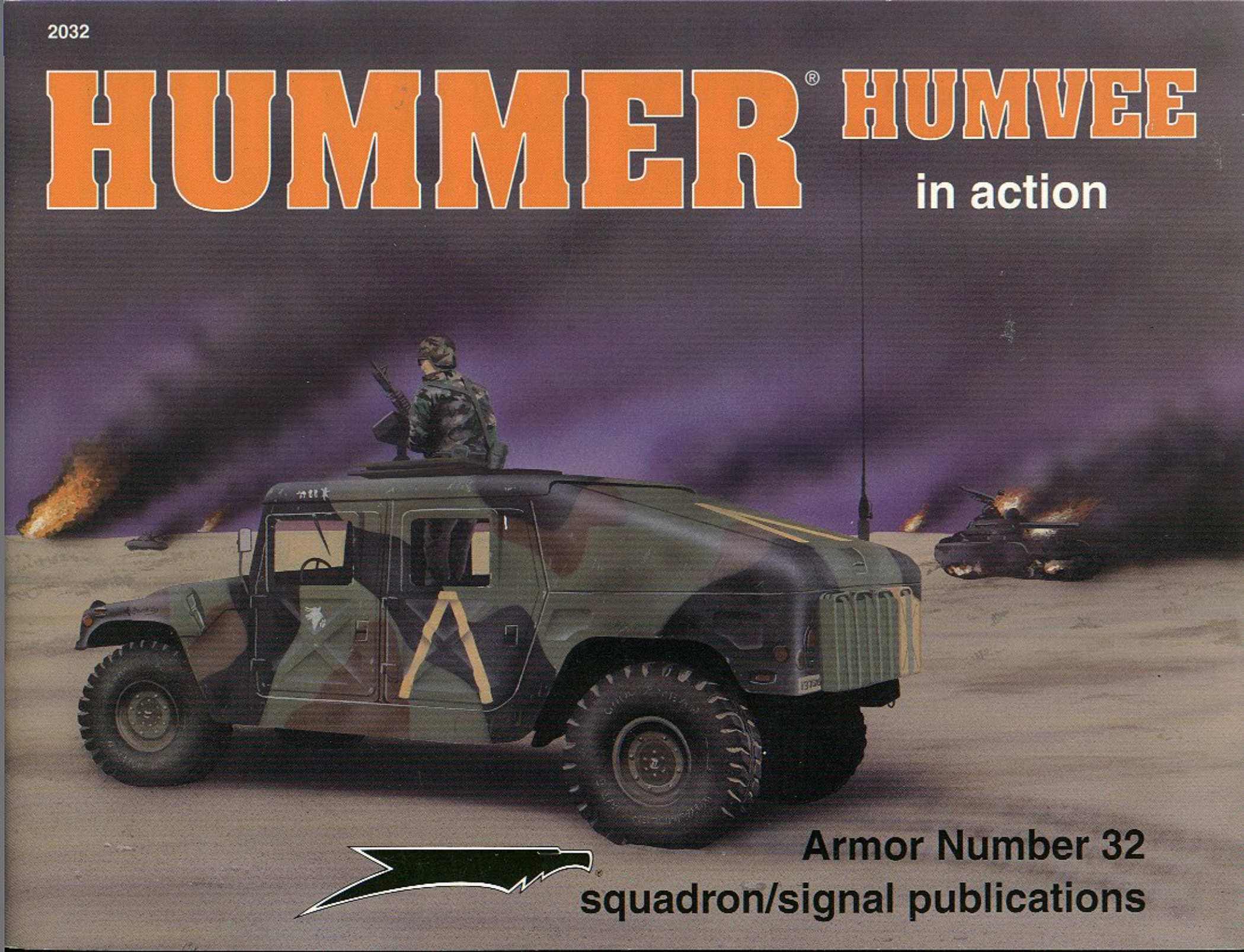
2032

HUMMER® HUMVEE

in action



Armor Number 32

squadron/signal publications

HUMMER® HUMVEE

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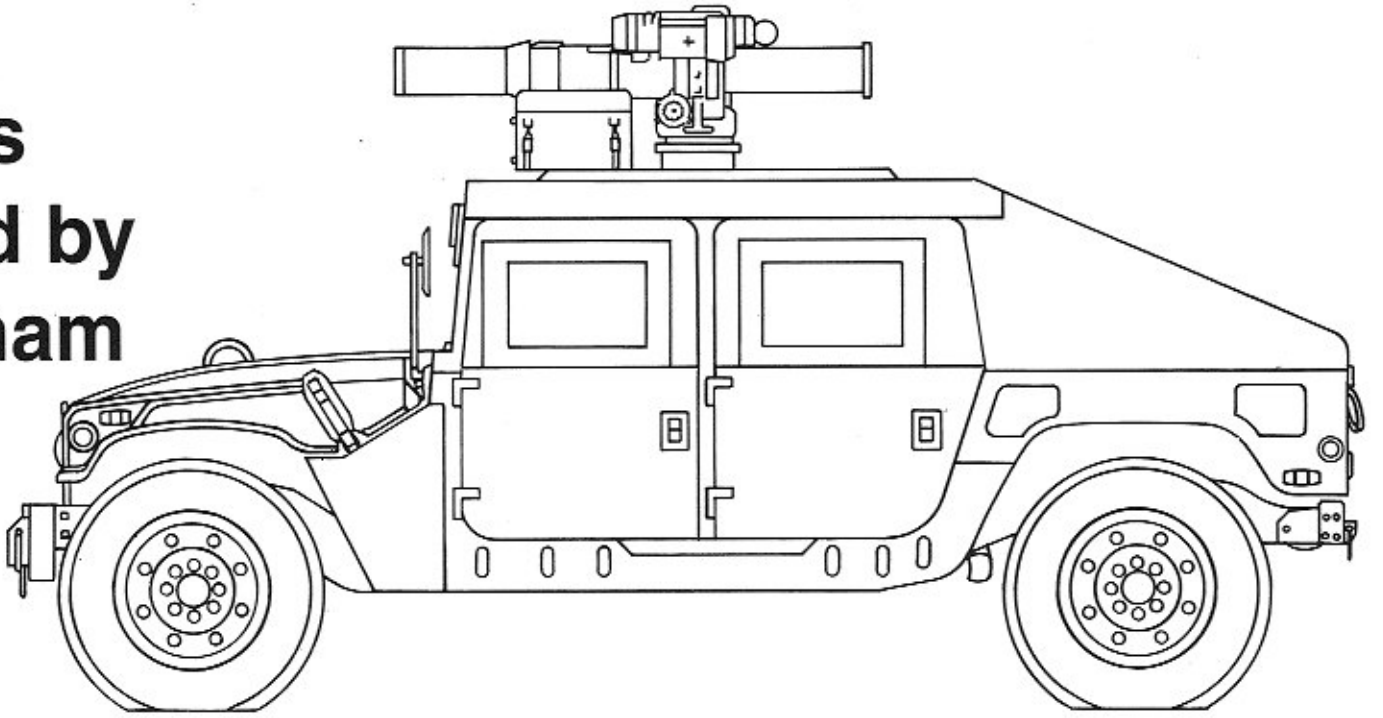

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A crewman mans the M60 machine gun of *Poison Ivy*, a M1025 Hummer of the 838th Military Police Company, Ohio National Guard, as he watches the oil well fires in Kuwait during the closing days of Operation DESERT STORM in February 1991.

Dedication:

This book is dedicated to the memories of Thom Wagoner and Walt Lonczinski, good friends who did much to promote modeling and research over the years. Their passing leaves a void in the lives of those who were fortunate enough to have known these unique individuals. May they rest in peace.
Jim Mesko, 1994

Thom Wagoner
13 January 1935-9 March 1994

Walt Lonczinski
10 October 1937-1 June 1994

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Hardly recognizable under all the extra gear carried by her crew, a Hummer awaits the order to move out as its crew takes a break during the final stages of Operation DESERT STORM. During operations in the desert American troops used the Hummer in a wide variety of roles and it became the most recognized military vehicle to the general civilian population, who were watching the war on the evening news coverage. The crew of this particular vehicle have strapped on a wide variety of equipment including barbed wire, metal stakes, bed rolls, tarps and Dragon anti-tank missiles. Throughout the campaign the Hummer performed in an outstanding manner and passed the hardest of all tests for a military vehicle -- combat. (USAF via Cole)

Introduction

When it was announced during the early 1980s that the Army was going to replace the Jeep with a totally new design, most people, in and out of the military, were exceedingly skeptical that anything other than another Jeep, could replace this legendary vehicle. Millions of American fighting men had taken it into battle during the Second World War, Korea, and Vietnam and perhaps no other vehicle had come closer to symbolizing the U.S. military, than had the little Jeep.

Its replacement, the AM General High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) was not only to replace the Jeep, but also a number of other light vehicles which further increased fears that the Army was trying to do too much with one vehicle and would end up with a very expensive "white elephant" which would not fill any of its intended roles in satisfactory manner.

Yet, if anyone had looked back on the development of the Jeep, they would have seen that no one had anticipated what all this little vehicle would eventually do. Perhaps this new replacement would be just as much a surprise as the fabled Jeep had been. At least that is what its designers were hoping for.

The Jeep itself had been born as a result of an Army requirement issued in 1940 for a light-weight general purpose vehicle in response to the gathering war clouds in Europe. Stunned by the Nazi Blitzkrieg against Poland and France, the Army realized it was in a poor state of mechanization and hurriedly tried to close the gap before the U.S. became embroiled in war. The Army requirement included a 600 pound payload, four wheel drive and light weight (under 1,300 pounds). In response, a design with these parameters was submitted by the Bantam Car Company. Although it met the specification, tests showed that it was under powered and unable to withstand the rigors of field usage.

These problems not withstanding, the Army saw some potential in the general design of the vehicle. During the testing phase, representatives of Willys Overland and Ford witnessed the trials. Using data from these tests, both companies also submitted similar vehicles based on the Bantam design. Eventually, the Willys design was selected, due to its more powerful engine. The Army had also feared that Bantam, due to the company's small size, would be unable to handle a large government contract. Willys began production in late 1941, followed by Ford, which received a license from Willys to manufacture the small, one quarter ton general purpose vehicle. The initial order was for 16,000 units, and this was continually added to throughout the life of the vehicle. Eventually, some 350,000 Jeeps were produced. Its rugged construction, four wheel drive and easy maintenance earned it the undying gratitude of the troops in the field who literally found dozens of official and unofficial uses for it. The Jeep served on all fronts with U.S. and Allied forces, and even in Axis units, that were fortunate to capture them intact.

Following the end of the war, large numbers of Jeeps were put into storage as the Army cut back on its strength. The vehicles that remained in service were upgraded in minor ways but no change was made to the basic design. These vehicles saw service in Korea for three years, which seriously depleted the remaining stockpiles of vehicles. This and the fact that the basic design was over a decade old, prompted the Army to look for a replacement.

Willys had adapted to the postwar economy by introducing a civil version of the Jeep, the CJ-3. The Army looked it over and decided to order it as a replacement. There were a few modifications, particularly in the suspension and electrical systems, to bring it up to Army specification. Designated the M38, its general performance was not as good as the original, but it filled the gap until a more suitable vehicle could be found. This came in the form of the Ford designed M151 Military Utility Tactical Truck (MUTT) which went into service during the early 1960s. But the nickname MUTT never caught on and the M151 was almost always referred to as a Jeep. The M151 series proved overall to have better performance than its predecessors, even though its handling characteristics were more demanding due to its suspension. The M151 saw widespread U.S. service in Europe, Vietnam, Lebanon and Grenada, where it proved to be exceedingly popular with the troops.

Unfortunately, the Army realized it needed a more powerful vehicle which could carry a greater payload than any of the Jeep type vehicles. In addition, it was hoped that the new vehicle would be able to replace the M274 Mechanical Mule and the M561 Gamma Goat,

When the Second World War broke out, the Army found itself desperately in need of wheeled vehicles and, in 1940, came out with a request for a small, light weight four-wheel drive utility vehicle. The vehicle that came out of this request was the famous Jeep which saw service in a wide variety of roles throughout the war and long after. The Jeep continued to serve until the late 1970s when the Army began looking for a replacement for the now legendary vehicle. (Green)

Three companies submitted proposals to the Army for a Jeep replacement, including AM General which had obtained rights to a vehicle under development at FMC, the XR311 Dune Buggy. This XR311 is armed with a M60 machine gun and a 40MM grenade launcher. (Bishop)

along with various modified civilian light trucks. The Mule, another Willys design, was a small, simple cargo carrier which hauled about a ton of general cargo. The Gamma Goat, a high mobility truck which articulated in both roll and pitch, was effective when working, but was mechanically unreliable and noisy, both characteristics which did not endure it to its crews or maintenance personnel. The Army had also acquired a number of Dodge and Chevy trucks to fulfill general administrative and logistical needs but these had only limited off road capabilities and were not designed for the heavy usage and the resulting wear and tear which military vehicles received.

These needs and concerns led the Army to issue guidelines for a new vehicle in the late 1970s, under the designation High Mobility Multi-purpose Wheeled Vehicle (HMMWV). In response to this requirement, three firms; AM General, Chrysler Defense, and Teledyne Continental, submitted proposals for the new vehicle. Although each was different in design, they all fell within the Army requirement and each company was given the go-ahead to produce prototypes for testing and evaluation. Chrysler Defense, acquired by General Dynamics in the early 1980s, submitted a design known as the XM998. This vehicle was powered by a V8 diesel engine and featured a three speed transmission, independent front suspension, and a limited slip differential solid rear axle. Teledyne's prototype was based on the Cheetah, which had been developed by Mobility Technology International, which had sold the design to Teledyne. The vehicle was powered by a diesel V8 engine, had a three speed automatic transmission, all around independent suspension fitted with variable rate torsion bars and an aluminum body over a solid steel frame. AM General's entry was based partially on a vehicle which the company had acquired from FMC. FMC had designed a prototype using the best design features of off-road civilian vehicles which included low silhouette, good power-to-weight ratio, and good mobility. Designated the XR311 Dune Buggy, it was designed to fill a number of reconnaissance and light weapons carrier roles. FMC; however, had decided against entering this field, opting instead to concentrate on its tracked vehicle line, such as the M113 and Bradley. As a result the XR311 was acquired by AM General. AM General took the basic design, added some armor and minor changes, and redesignated it the XM966.

Working from the XM966, AM General came up with a new vehicle, the XM998, which was more in line with the Army requirement. These included high mobility, ease of transportation, wide climate adaptability, easy conversion to various roles from the basic configuration, durability, light weight, ease of maintenance and field reliability. The initial prototype was ready by late 1979 and was sent, during mid-1980, to the Nevada Automotive Test Center, where it accumulated some 17,000 miles of testing by the beginning of 1981. Using

The design evolved as new requirements were issued by the Army and eventually it became a more all-encompassing vehicle. The changes resulted in the XM996, which could be configured in a number of ways including cargo carrier, light troop transport and armament carrier. (Bishop)

The final vehicle was officially designated the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV), but AM General named it the Hummer. The troops often refer to the vehicle as the Humvee, and both names have become interchangeable. (Green)

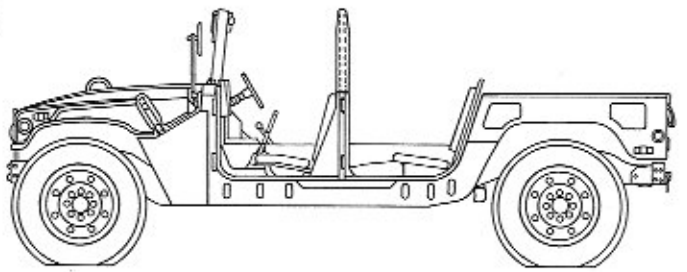
data from these tests, AM General constructed five additional engineering prototypes. In July the Army issued contracts for eleven vehicles from each of the three competing companies for a variety of tests. AM General was the first to deliver its quota of vehicles, designated the XM998, to the Army which split testing between Aberdeen, Maryland and Yuma, Arizona, Fort Hunter-Riggett, California, the Navy Amphibious Base at Coronado, California, and the Marine Corps facility at Camp Pendelton, California. Following these tests, the three companies submitted production proposals to the Army which had to select which vehicle it felt best met the criteria set down in the tests and fit within the budgetary restrictions it was working within. In March of 1983, the Army announced that AM General was selected to produce its version and gave the company a five year, 1.2 billion dollar contract for 55,000 vehicles with an option for an additional 15,000 more, if so desired.

In spite of this, however, AM General still faced an additional challenge. The Government Accounting Office (GAO) initiated a review of the Army's contract shortly after it was awarded. A year later, the GAO issued a report which criticized the Army in general for issuing such a contract since the GAO found the vehicle to be unreliable and was critical of its design. Eventually, Congress did provide the funds for the project when the GAO's specific objections to design and reliability were shown to have been either rectified in production models or were basically unfounded. Additional tests proved the soundness of the design and the vehicle was officially introduced into service at the Farnborough Air Show by longtime defense advocate Senator Barry Goldwater in 1984.

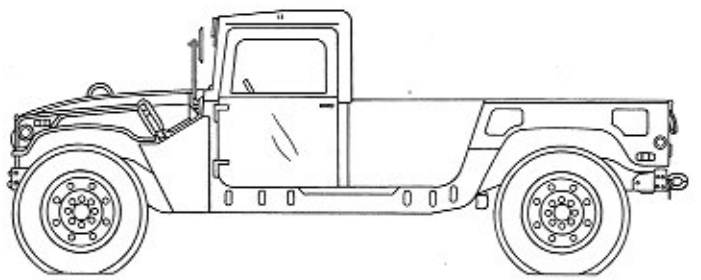
During the testing phase, AM General had named its entry the Hummer (AM General registered trademark), which stood for nothing in particular. While the official Army abbreviation HMMWV was used to designate all three of the competing vehicles, troops and the news media began referring to them as HUMVEE's since this came closest to what the initial sounded like. Eventually, when AM General was selected for the production contract, their name followed it. Both names have become synonymous with the vehicle and are used interchangeably both by the troops and in accounts of the vehicle.

Development: Cargo/Troop Carriers

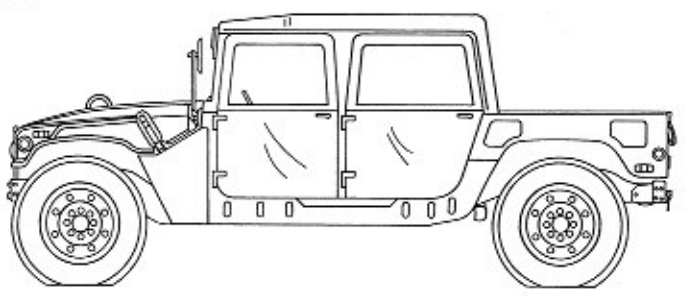
M998



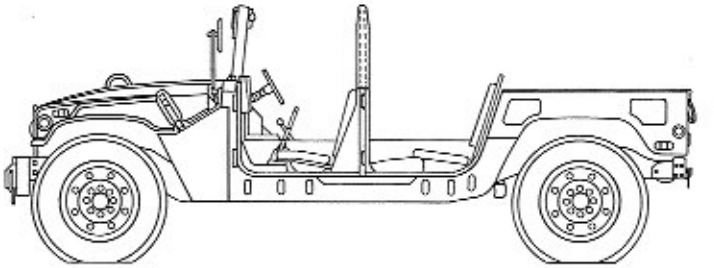
M998 Two Man Cab



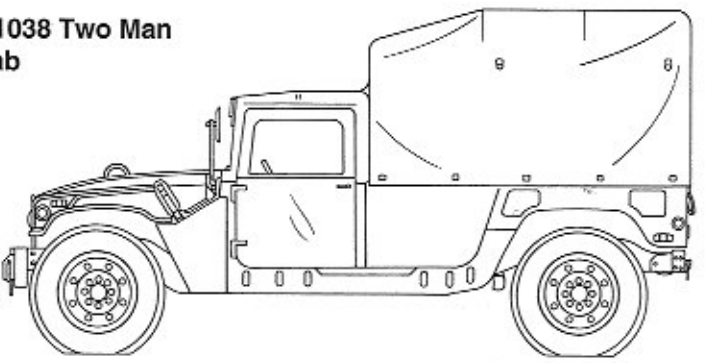
M998 Four Man Cab



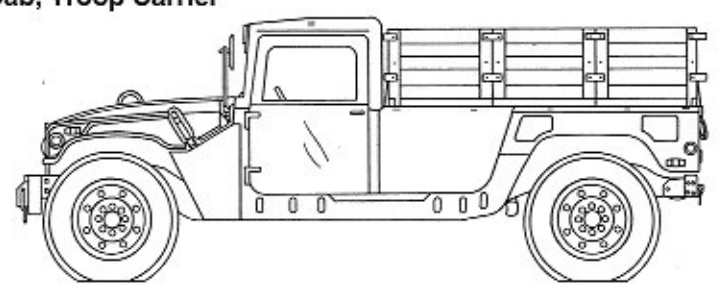
M1038



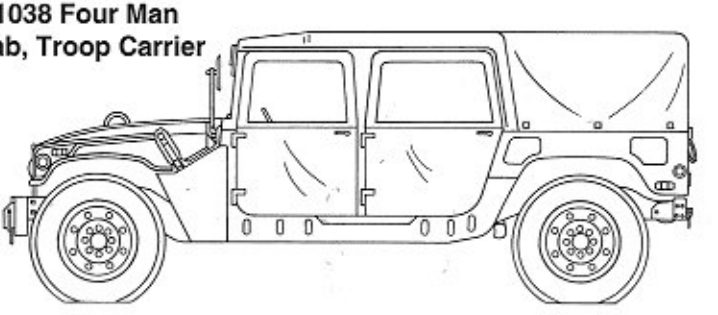
M1038 Two Man Cab



M1038 Two Man Cab, Troop Carrier



M1038 Four Man Cab, Troop Carrier



Hummer/Humvee

What finally emerged at AM General was unlike any other vehicle ever procured by the U.S. Army. The Hummer is a big "little" vehicle, measuring fifteen feet long, seven feet wide and six feet high. Compared to the Jeep, the Hummer is four feet longer, almost three feet wider, but only three inches higher. While the larger dimensions means the Hummer is not as easy to maneuver as the Jeep, it is far more stable due to its longer length and wider wheel base. It is also far more versatile.

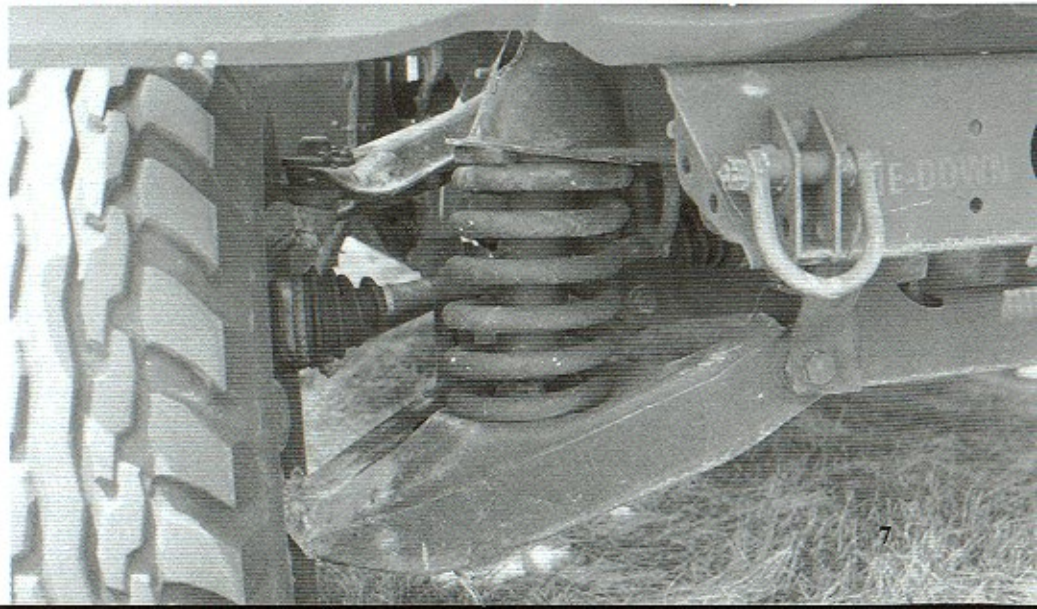
The body frame of the Hummer is made of steel for the needed strength dictated by its off-road requirement, while aluminum is used for general body construction. It has an independent front and rear suspension system fitted with coil springs and hydraulic double action shock absorbers. Both front and rear axles were adopted from the AMC Jeep and are usually fitted with Goodyear Wrangler RT II all-terrain biased tires. Mounted on sixteen and a half inch rims, these tires are three feet by one foot one half inch and give excellent service in all types of terrain. A new feature, available on later production models, is the Central Tire Inflation System (CTIS) which allows the crew to reduce tire pressure in adverse conditions for better traction.

In order to give the Hummer better ground clearance, the drive shaft and differential are mounted high up on the chassis, which provides protection from rough terrain. Both front and rear drive shafts are identical, which allows them to be interchanged, simplifying logistical support. Power is supplied by a General Motors 6.2 liter V8 diesel engine which is the same

The basic Hummer design centers around a steel body frame with aluminum being used for the remainder of the major components. This allows for rugged construction and a relatively light weight which gives the vehicle an excellent off-road capability especially due to its high ground clearance. This is the M988 cargo/troop carrier version which can be configured in a number of different ways depending on mission requirements. (Mesko)

The Hummer uses Goodyear Wrangler RT II tires which have proven to be excellent all-terrain tire, in mud, sand, snow and rough terrain. They can run for up to 30 miles while flat at speeds up to thirty mph. A Central Tire Inflation System (CTIS) has been developed by AM General for the Hummer but as of this time the Army has still not decided to adopt it for service. (Wagner)

The Hummer has independent front and rear end suspension systems and is equipped with coil spring and hydraulic double-action shock absorbers. While this does not provide the smoothest of rides it is well within the parameters of military comfort. (Wagner)

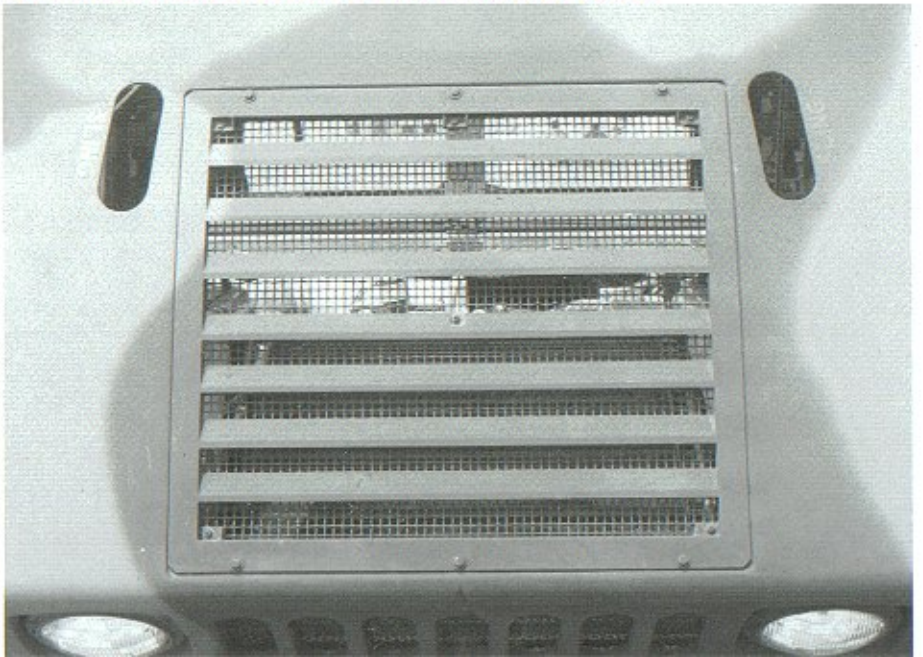


A General Motors 6.2 liter V8 diesel engine provides 150 hp to drive the Hummer over all types of terrain. The hood lifts forward to allow easy access to the engine compartment. The White plastic container in the lower right is the windshield washer tank while the radiator is located in the middle to the left. The round canister with the tube coming out of it at the top middle is the air cleaner. (Mesko)

Access to the rear of the engine can be gained by removing the engine access cover located between the driver and passenger seats. Clips on the bottom and the side of the cover hold the cover securely in place.

The Hummer is relatively easy to drive, being equipped with an automatic transmission, so there is no problem with shifting. The shift levers are located just behind the parking brake located by the upper corner of the seat . The smaller of the two knobs is the transfer shift lever which selects the driving range (low, high, neutral and high lock), while the larger one behind it is used to select drive, neutral, reverse, seconds or first driving range. On the panel next to the steering wheel is the rotary switch (on the Black panel) for starting the engine, while under it on the oval plate are the light switches. The brake pedal is to the left, while the accelerator is on the right.

The radiator is fitted with a special set of baffles that allows a free flow of air to the radiator but provides protection from shrapnel and debris. (Wagner)



One of the important features of the Hummer is its ability to be converted or modified for any number of missions. This particular vehicle has had the rear seat on the passengers side covered over for use in hauling cargo, although the seat behind the driver was retained. The Hummer's doors can easily be removed if needed on all variants. (Mesko)

Probably the most common complaint from troops in the field is that the seats provide only the most minimal padding, particularly when going over uneven terrain. To alleviate this situation many troops buy some sort of seat cushion made of foam rubber as extra padding for their posteriors. (Mesko)

The Hummer can be fitted with a number of different types of radio transmitters and receivers which are normally mounted on a rack which sits behind the rear engine cover in the cab. In addition to the basic type, special fittings can be added in the rear on certain Hummer variants. (Mesko)

power plant used in the Chevy light trucks used by the Army. The 379 cubic inch engine produces 150 hp, giving the vehicle a good power to weight ratio and allows it to go places that no other wheeled vehicle can. Power from the engine is transferred via a General Motors Hydramatic THM400 three speed automatic transmission coupled to a New Process 218 high and low, two speed transfer case with full time four wheel drive. The radiator for the engine is protected from debris and shrapnel by a special ballistic shield which allows a free flow of air, but deflects other objects. The engine hood lifts forward for easy access to the power plant from either side. The power plant is very reliable and usually requires only routine daily servicing.

The basic aluminum body structure was designed to make it easy to change the Hummer's configuration. Normal seating is for four persons, although the rear seats may be folded down for additional cargo space. The seats are, unfortunately, not one of the vehicle's strong points and provide the minimum cushioning for the human posterior. Many soldiers opt to buy an additional pad which they place in the seat for a more comfortable ride. All vehicles come with four doors, although certain variants do not make use of the rear doors. On the unarmored versions, these are metal frame, fabric covered doors, while on the armored models, aluminum doors are used. The only exception are the hard topped ambulance variants, which use the aluminum doors.

Since the Hummer was designed to be employed in any climate from the Arctic to the desert, certain features are standard on all models. While the vehicle is not equipped with an

The basic cargo/troop carrier, fitted with a soft top and minus its doors, is one of the most common variants of the M988 in current service. This particular vehicle was one of the first delivered to the Army at Fort Knox for evaluation by troops in the field during the Summer of 1986. (Mesko)

air-conditioning unit, the doors can be removed for increased ventilation.l For cold climates, the vehicle has an efficient heater and this feature is really appreciated by troops in the field. Rounding out the more common features are power steering, windshield washers, and power disk brakes, which allow the driver to make an easy transition from his every day civilian vehicle. The V8 engine pushes the vehicle along at a fairly good speed of sixty-five mph on smooth surface roads. With a twenty-five gallon fuel tank, the vehicle has a road range of some 300 miles under normal conditions. All variants of the Hummer, except the ambulances, can be fitted with a winch on the front fender. As an additional safety feature, all vehicles are equipped with a roll-bar.

What all this translated into was a superb, light weight, all terrain vehicle which can carry out a large variety of tasks under adverse conditions. With a sixteen inch ground clearance and four wheel drive, the vehicle has tremendous off-road capabilities. It can climb a sixty degree slope, ford nearly three feet of water without any preparation, traverse a forty percent side slope and run on flat tires for up to thirty miles. The basic unarmored model can carry 2,500 pounds of cargo or tow up to a 3,400 pound load. The basic configuration can be easily modified to a number of roles without extensive work, giving the vehicle a great deal of versatility. While it is easy to cite statistics and performance figures, the true test of any vehicle is how it performs in the field. In this respect, the vehicle has proven itself from Europe, to Panama, to Desert Storm, with unequaled performance. Far from being a "white elephant" the Hummer has indeed become a worthy successor the its predecessor, the Jeep. It has taken its place in the annals of military history.

M988/M1038 Cargo/Troop Carrier

By far the largest number of Hummers in service are the basic cargo/troop carrier variant, designated the M988. If fitted with a front fender mounted wench, it is designated the M1038 and the only real difference between the two is the overall length and weight. Drivers of the winch equipped vehicles must be more careful when turning sharply in restricted areas because of the slight increase in length. The basic model is equipped with four passenger seats and four doors for entry and exit. If the seats are all removed, the vehicle can be used as a cargo carrier by extending the rear cargo bay forward. If a troop carrier is required, wooden benches and backrests can be added for carrying eight troops and their equipment. A variety of canvas covers are available to protect troops and supplies or equipment from the elements. The most basic canvas cover protects only the front seating area when the Hummer is being used as a cargo or troop carrier. To this can be added a large cover that fits over the troop/cargo bed for additional protection. When used in the four seat configuration, an extended canvas top covers all four occupants and an extension is available for this to go over the cargo area in the rear. All these covers are laid down over metal supporting rods which fit into slots along the vehicle frame.

When not in use in the four passenger configuration, the rear canvas doors are removed and replaced with either wood or aluminum plates to close off the openings. Depending on conditions, the crew may remove all the doors while in the field if conditions warrant it. Options also exist for mounting various weapons on the M988/M1038 if needed.

Overall the M988/M1038 has proven to be extremely effective in the cargo/troop carrier role. It can carry more troops and cargo than either the Jeep or the various civilian based vehicles in the inventory over far more difficult terrain. The ease in which it can be configured for various roles is an added plus and gives field commanders many options for moving men and

The rear cargo compartment allows the crew to carry a wide variety of weapons, gear and other material which they might need in the field. An additional extension may be added to the canvas cover to protect material carried in the cargo bed from the elements. (Mesko)

This Hummer has been fitted with the extended cargo cover and retains its canvas doors. While the canvas is not the best protection from the cold it does keep men and material dry, while the heater provides the troops with a reliable source of heat to help ward off the cold. (Jerchel)

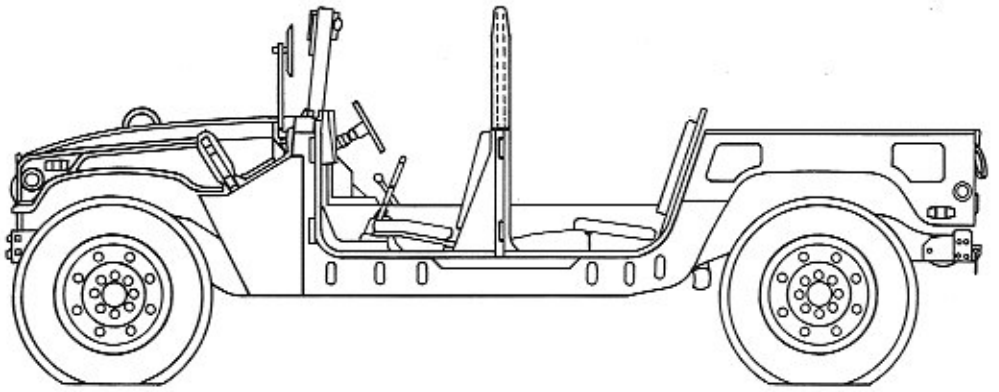
material as needed in a given situation.

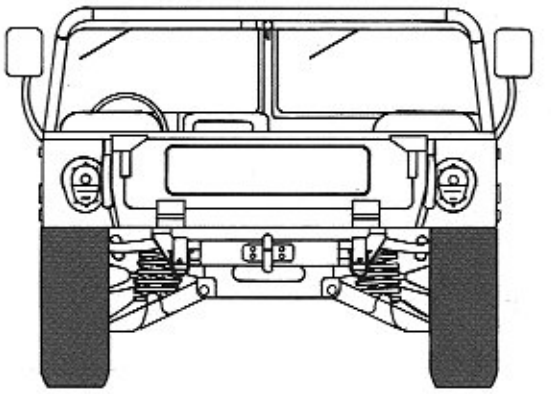
While the Hummer will never replace the Army's fleet of heavy duty cargo trucks, it has lessened considerably the need to use larger vehicles in the transport of relatively small loads, which the Jeep or other vehicles could not handle, thus saving on gas and wear and tear on the larger vehicles. As such, the Hummer has proved to be an ideal light weight cargo/troop carrier, fulfilling one of the key roles which the Army set forth in its 1979 draft specification.

If need be, the entire canvas structure can be removed from its metal framing for all-round visibility (Mesko)

The Hummer can also be configured with a two-man cab and used in the pick-up truck mode. This particular vehicle, being loaded aboard a C-5 transport, has its cargo hold covered by a canvas enclosure and either wood or plastic inserts in place of the rear doors.

When used as a troop carrier, wooden seats and back rests are added in the rear for carrying up to eight troops and their equipment, although often more are carried. The vehicle's radio antenna mount is located on the right rear fender. (Mesko)



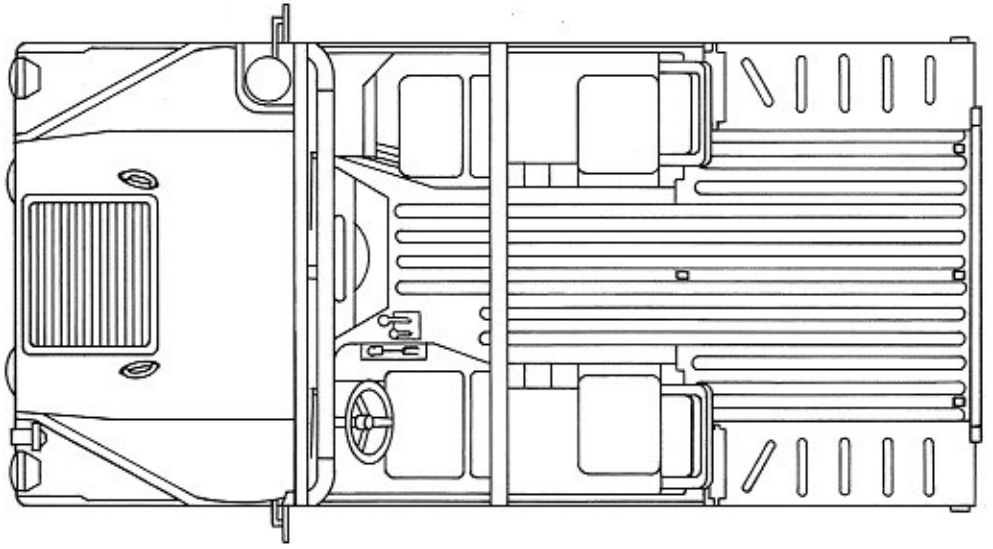


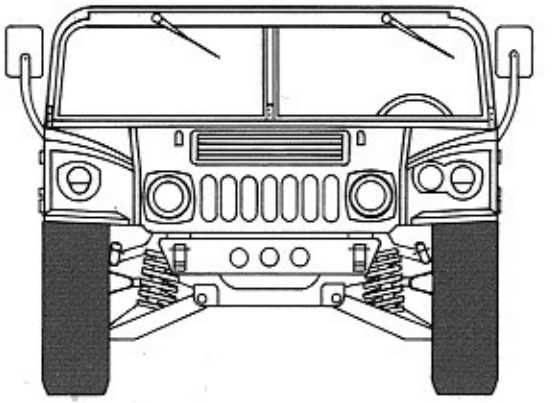
Specification

M998 Troop/Cargo Carrier

Length.....15 feet (4.58m)
Width..... 7 feet (2.16 m)
Height.....6 feet (1.83 m)
Empty Weight.....5,200 pounds (2,359 kg)
Maximum Weight.....7.700 pounds (3,493 kg)

Powerplant.....One 150 hp V8 Diesel
Armament.....None.
Speed.....65 mph (105 kph)
Range.....300 miles (482 km)
Crew.....Four





The wooden sides and open back allow the troops to have good visibility, highly necessary in a combat zone, although the ride on the hard wooden bench type seats is even worse then the regular seats on the vehicle.

For protection against the elements a large canvas cover may be added which allows the troops sufficient head room so that they are not required to bend down. This allows for a somewhat more comfortable position while in transit. (Jerchel)

In bad weather a canvas flap may be pulled down to cover the rear opening for additional protection. A small clear plastic panel gives the rear occupants a small amount of visibility and light. (Jerchel)

M1035/M996/M997 Ambulances

To facilitate the removal of battlefield casualties from forward areas or in rugged terrain there are three basic ambulance variants of the Hummer. The standard cargo/troop carrier model has been modified to carry either two or three litter or four ambulatory patients, along with a driver and medical attendant. When fitted with a canvas cover it is designated M1035, when fitted with armor protection, it is known as the M996. A third variant, also armored, is available under the designation M997. This version is fitted with a larger compartment that is equipped with an air conditioning unit and can carry four litters or eight ambulatory patients.

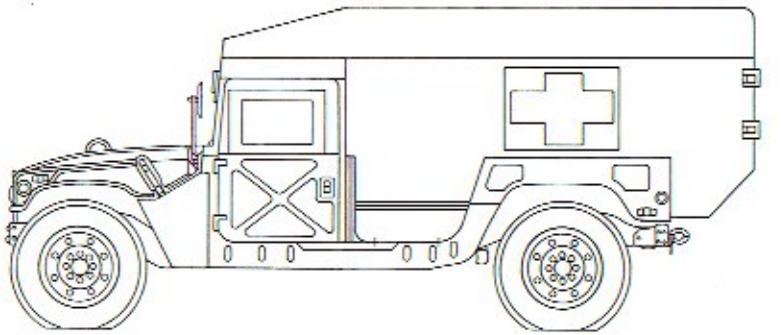
Unlike the first two, the M997 is not air transportable on the CH-47 Chinook helicopter. Both the M996 and M997 provide more comprehensive medical facilities and equipment than the earlier M1035, and are referred to as the Mini (M996) and Maxi (M997) Ambulances.

Both the M1035 and M996 can either be air dropped or delivered by means of the Low Altitude Parachute Extraction System (LAPES) which the Air Force uses to deliver supplies to forward positions.

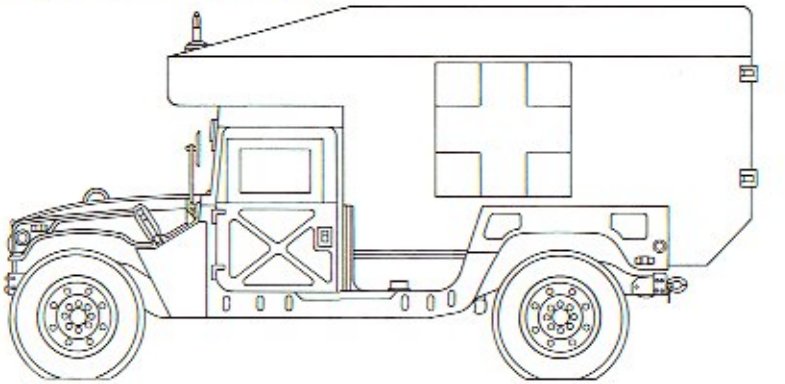
The Hummer has been configured three different ways for combat ambulance duties. The first of these is the M996 soft top variant which is a basic cargo/troop carrier Hummer fitted with a canvas top that extends over the rear cargo area. It can carry two litter patients or four ambulatory ones along with the driver and medical attendant. (AM General)

Ambulance Variants

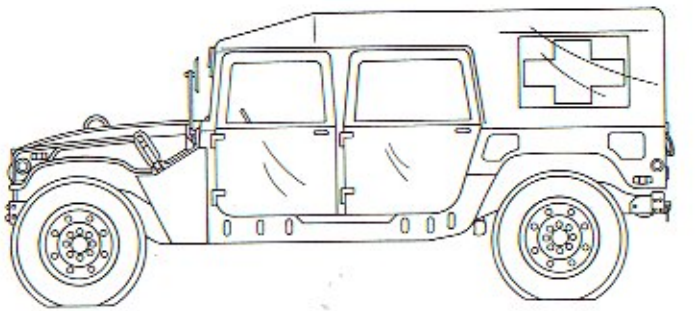
M996. Armored Two Litters



M997, Armored Four Litters



M1035, Soft Top Two Litters

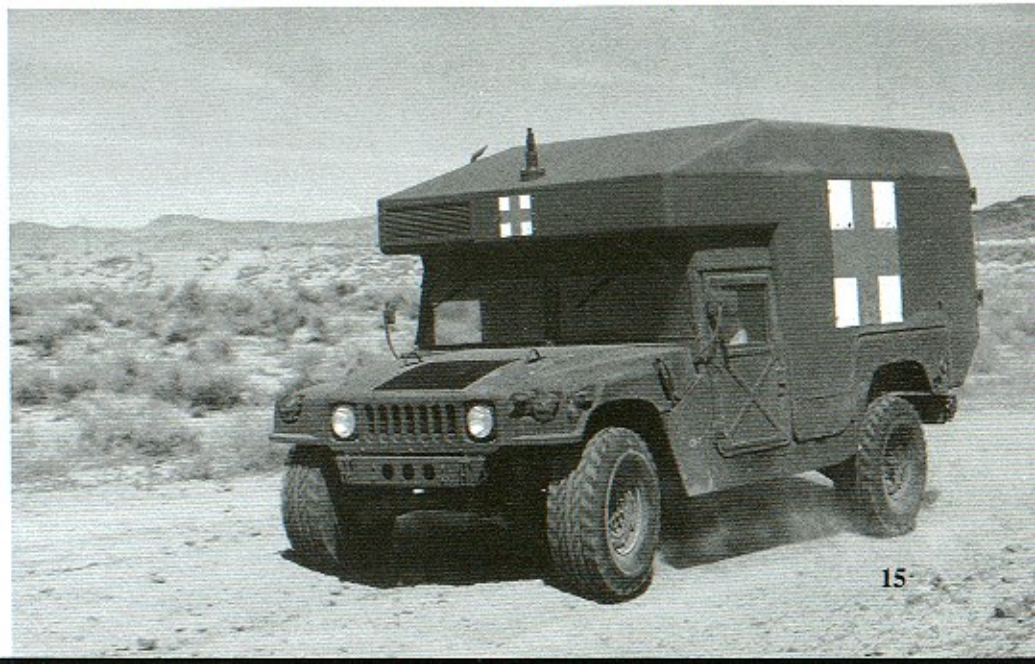


The second ambulance variant is the M997 Mini-Ambulance which is fitted with armor protection for the crew and patients as is evident from the "X" pattern on the door. (AM General)

The third version is the M997 Maxi-Ambulance, parked next to a M996 Mini prior to being shipped to their respective units. The Maxi is also armored and carries four litters and additional equipment for battlefield survival including an NBC system for use in contaminated environments and an air conditioning system. (AM General)

The Mini-Ambulance normally carries two litters, although this can be expanded to four in an emergency. Due to its larger size, this vehicle carries more medical equipment than the M1035 soft top type, which allows the medical personnel to give better care to their patients.

Despite its additional weight the Maxi-Ambulance still has the same outstanding performance of the Hummer in general and provides the severely injured soldier in the field with a reliable and relatively comfortable ride back to the hospital. (AM General)



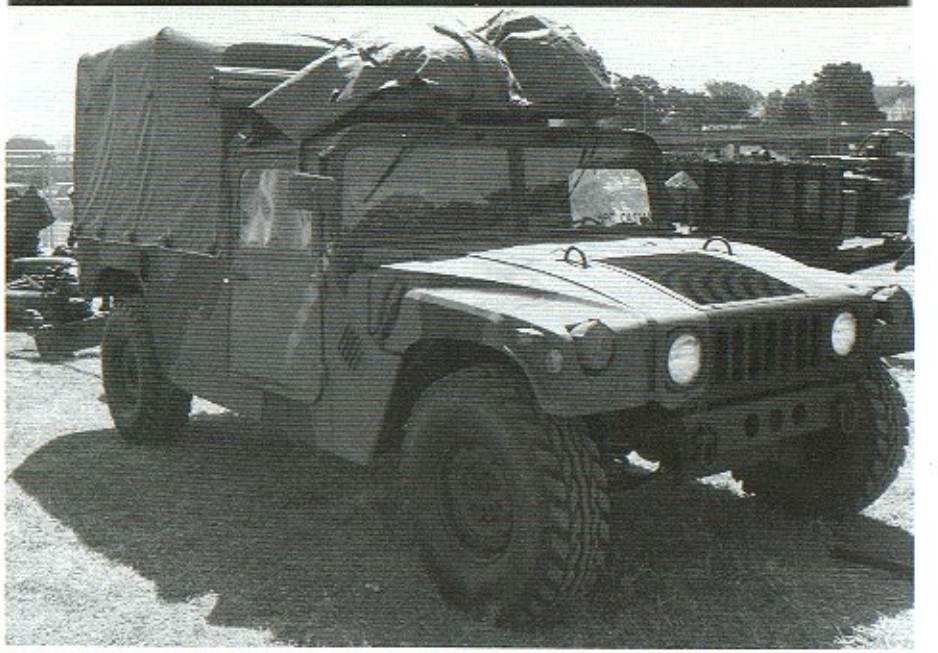
M1069 Prime Mover

The Army decided, when it made the decision to adopt the Hummer, that it would be used as a prime mover for towing light artillery, primarily the M102 105MM howitzer. Basically, this version is the standard M998 Cargo/Troop Carrier although other variants could be used should the need arise. When the decision was made to update the light artillery units with the M119, based on the British L119 105MM howitzer, a new model of the Hummer, the M1069, was tested in the prime mover role.

Unfortunately, when towing the M119, the Hummer's ride was so uncomfortable in field tests that it was decided to use the M1097 Heavy Hummer in this role. Eventually, when all artillery units exchange the M102 for the M119, their prime movers will be replaced as well.

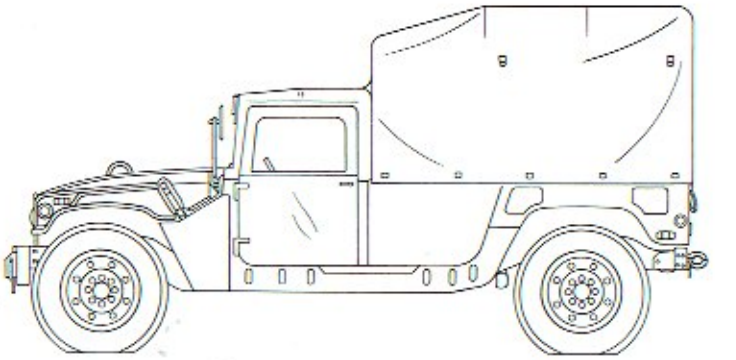
The prime mover is distinguishable from other variants by a special stowage rack which fits over the forward portion of the canvas cab. Normally, the two rear seats are also removed and the rear of the Hummer is configured with bench seats, backrests and a canvas top over the rear cargo compartment. Both the M998 and M1038 are used in the prime mover role.

The M1069 Hummer Prime Mover was developed to tow lightweight 105MM howitzers. Developed isn't perhaps correct, since all the Prime Mover is, is a standard Hummer with a storage rack located over the cab. This rack is used to stow additional gear which is needed by the howitzer unit, such as tarps, netting, and poles.



Apart from the overhead rack the Prime Mover Hummer is exactly like the standard cargo version fitted with a canvas cover over the rear

M1069 Prime Mover



M1037/M1042 Shelter Carrier

A little seen, though very important, variant of the Hummer is the M1037 (with winch M1042) Shelter Carrier. This Hummer has been fitted with a heavy duty suspension and increased electrical capacity to handle the hard surfaced S250 electronics equipment shelter. This shelter functions in the command, communications, control and intelligence (C3I) role. This box shelter is secured to the bed of the Hummer by a cable/turnbuckle arrangement to special brackets fitted to the cargo bed. With the structure are a variety of radios, computers, intelligence gear and other equipment. The equipment mix varies to facilitate the mission being undertaken. The box is removable if the need arises and it provides much better protection for the sensitive electronics than could possibly be obtained using the standard canvas covers.

Supplementing the M1037/1042 is the Heavy Hummer, the M1097. This vehicle has been fitted with a modified suspension which has raised the gross weight nearly a ton and a half. This allows the Heavy Hummer to carry a wide range of additional weapons systems, C3I shelters, and logistical systems, while affording better protection.

The Heavy Hummer has served as the basis for an armored version of the Hummer which is currently under development.

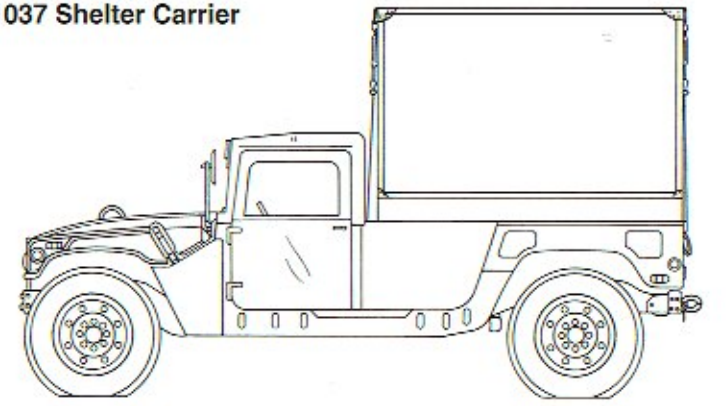
The Shelter Carrier version of the Hummer is fitted with a heavy duty suspension to carry a variety of modules used in communications, computers and other electronic equipment. The possibility also exists that the Hummer Truck (left) may also be fitted for such duty if it is accepted into service. (AM General)

The shelter, which is carried by the Hummer, is secured using cables and turnbuckles, allowing it to be removed if necessary for repairs or for the substitution of a different unit.

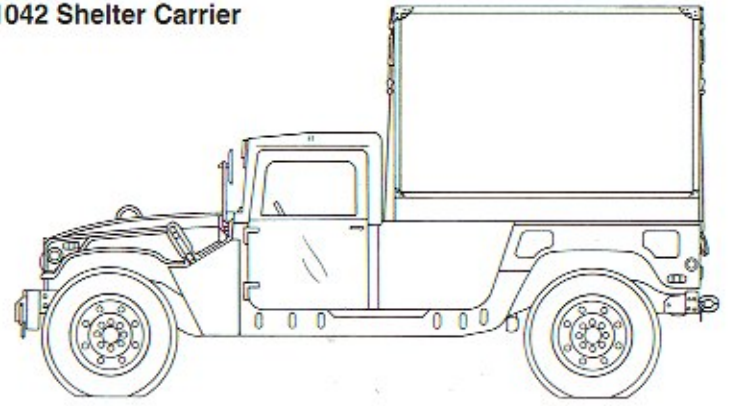
This particular shelter carrier has been outfitted as a switchboard unit and provides all the needed equipment to keep up with the demands of battlefield communications. Equipped with its own power source, such units need little, if any, outside assistance to function.

The shelters can be equipped with a wide variety of equipment including generators, air conditioning units and other such related items to insure that the shelter can operate with as little disruption as possible for the equipment and crew. (AM General)

M1037 Shelter Carrier



M1042 Shelter Carrier



Smoke Generator Hummer

The Shelter Carrier (M1037) has also been used as the chassis for a smoke generator version of the Hummer. Two standard smoke generators are fitted on either side of the cargo bed. These can produce a dense screen of smoke for either defense of offense. Due to its off-road capability, the Hummer can lay smoke in terrain previously impossible for other vehicles.

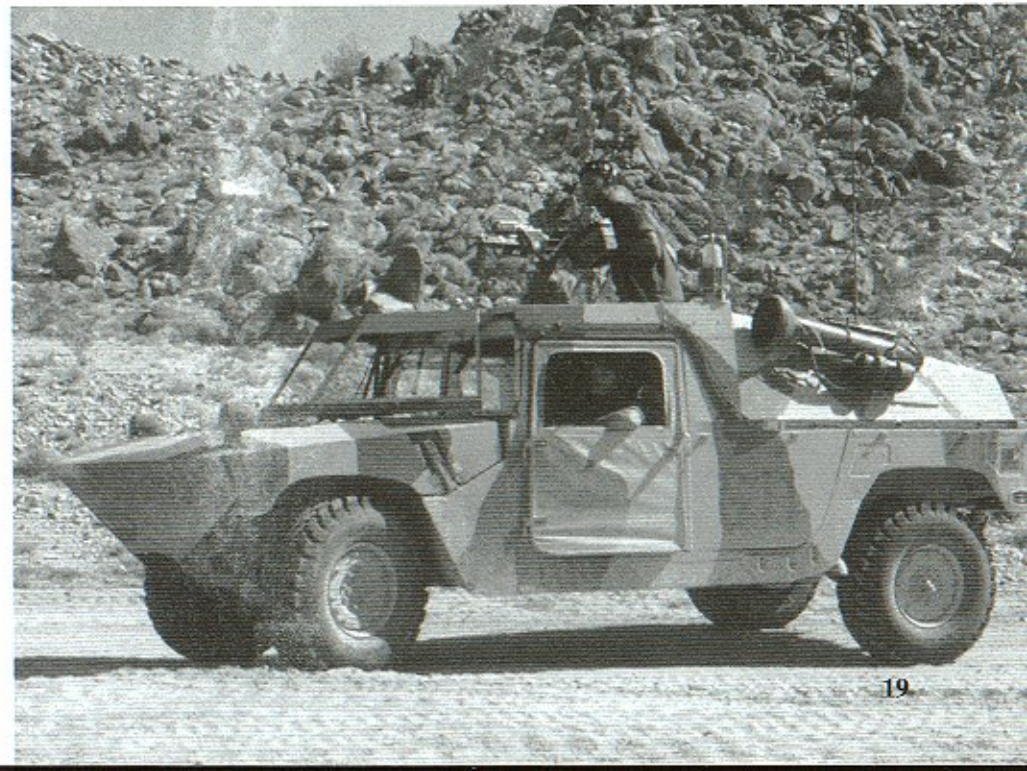
(Right) The Army has mounted smoke generators on the rear of the shelter carrier Hummer to provide a mobile smoke unit for frontline troops over difficult terrain. These generators lay out a dense smoke screen to shield men and vehicles from direct observation during critical phases of the battle.

OPFOR Hummers

Perhaps the strangest Hummer variants of all are those which have been converted by the Army at the National Training Center at Fort Irwin, California to look like Russian armored cars. The unit responsible for these vehicles is the Opposing Forces (OPFOR) unit which operates along Soviet lines to train U.S. units in how to counter Russian tactics. In order to make the training as realistic as possible, a number of U.S. vehicles have been reconfigured to look like Russian AFVs using plywood and fiberglass. A number of Hummers have been fitted to look like Russian BRDM-2 scout cars which entailed a complete nose section being added along with a gun turret on the roof. While these modified vehicles are not exact copies, from a distance they can easily pass for the real thing and they add an extra degree of realism to the hard training at the desert base, which helps prepare U. S. troops for the rigors of combat.

The Army has modified a number of standard Hummers at the National Training Center to look like Russian BRDM-2 scout cars, under the designation VISMOD Hummer. This has been done using fiberglass, metal and wood. The overall effect is quite good, especially from a distance. (Stewart)

The modifications to the Hummer include an extended front end, fake front windshield, and a fiberglass cap over the top which has raised sideson the rear cargo compartment. These vehicles are fully equipped with MILES gear used in realistic training at the National Training Center, Fort Irwin, California. (Stewart)



The front is attached to the hood, which makes for an unusual sight when the hood is raised for engine maintenance. This VISMOD Hummer is built on an armament carrier chassis which only needed the front end mods to make it look right. (Stewart)

In addition to units at the NTC, a number of other units have used VISMOD Hummers to simulate Russian scout cars. This armament carrier at Fort Lewis, Washington, has been extensively modified with a turret mounted on top of the vehicle for an even better simulation of the BRDM-2. (Army)

M1025/M1026 Armament Carriers

After the M988/M1038 Cargo/Troop Carrier, the next most common variant of the Hummer is the Armament Carrier, designated the M1025 (M1026 with winch). This differs in a number of ways from the M988/M1038 variants. The most significant feature is the hardtop enclosure which covers the entire vehicle from the windshield to the tailgate. In addition, the doors are solid construction in contrast to the canvas ones on the Cargo/Troop Carrier variants. These doors are fitted with windows, not clear plastic as on the soft side version. For extra rigidity, the doors have a definite X shaped pattern stamped into them which easily distinguishes them from their unarmored counterparts. The rear of the enclosure also opens, giving ample access to the rear cargo area, which can be equipped to carry a wide variety of equipment.

Atop the enclosure in the center of the roof is a thirty-two inch weapons ring which is fitted with a pintle mount and quick release cradle. This mount, which can rotate through 360 degrees, can be fitted with a M60 7.62MM machine gun, a .50 caliber M2 machine gun, a 40MM Mark 19 Grenade Launcher or the TOW 1/TOW 2 Anti-Armor Missile System. Early in the vehicle's development, a Hughes 25MM M242 Chain Gun was fitted, although this never became operational.

M996/M1036 Tow Carrier

Due to a slightly different configuration, the TOW models are designated as M996 (M1036 with winch). These vehicles have a slightly larger ring (thirty-six inches) and while the TOW system is attached to the ring, a floor mounted pedestal provides additional support. Internally, special built racks are fitted to the rear for reload missiles, which are loaded through the two-way cargo door. The Hummer has an internal capacity for carrying six TOW rounds. The entire TOW system can also be removed from the vehicle and set up as a ground mount if the tactical situation calls for it.

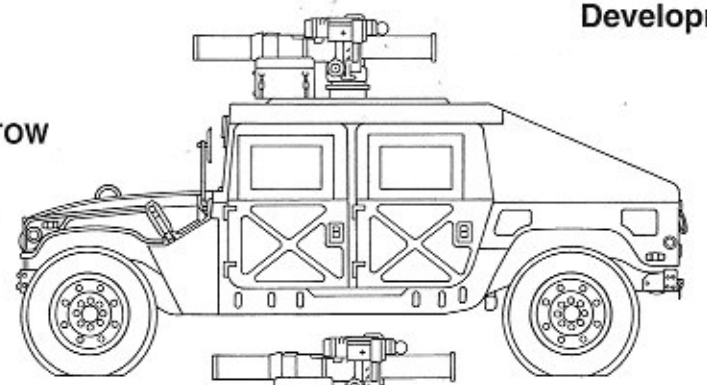
Supplimental Armor

To provide additional protection from enemy fire, a supplemental armor kit of aluminum armor plates can be fitted to the Hummer. The easiest way to spot a vehicle so configured is by the doors, which have a flat appearance, since the plates cover the distinctive X shape. The armored models also feature bullet resistant glass on the doors, which slide up and down, while the windshield is also bullet resistant. While this supplemental armor package provides additional protection to the crews and their equipment is not bullet proof and can only provide limited protection from small arms fire and shrapnel. Vehicles so fitted are designated differently than those mentioned earlier, as shown below.

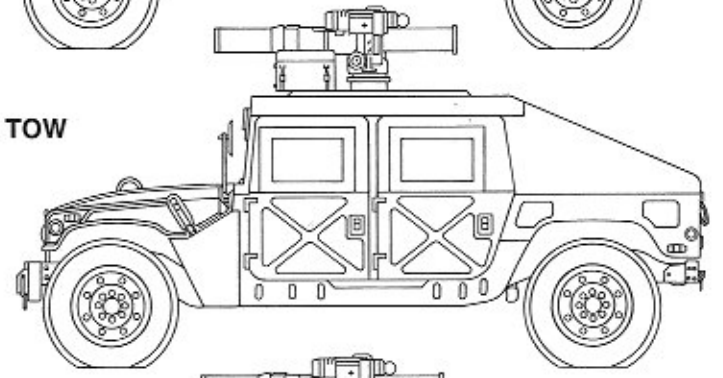
Without Supplemental Armor	With Supplemental Armor
M1025/M0126 Carrier	M1043/M1044 Carrier
M966/M1036 TOW Vehicle	M1045/M1046 TOW Vehicle

Development: Armament Carriers

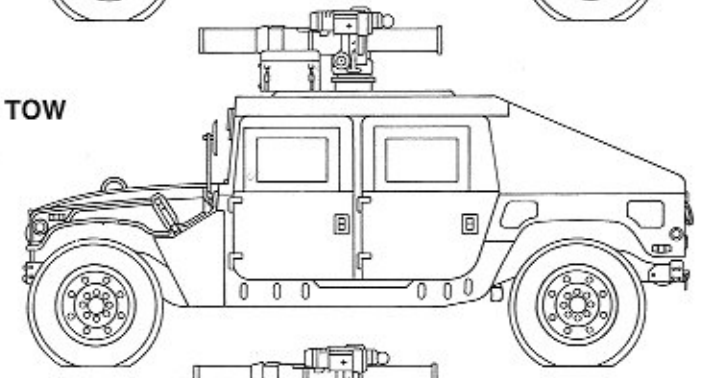
M966 TOW



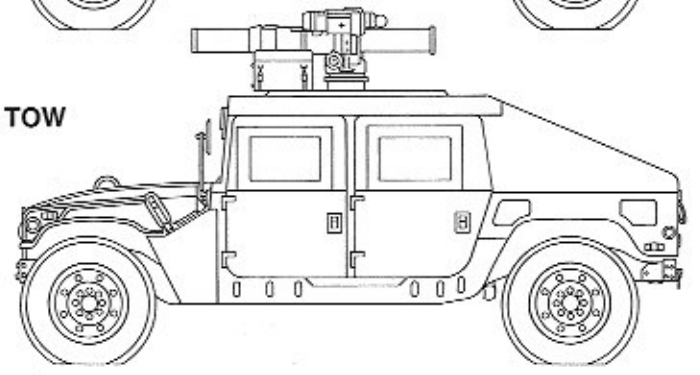
M1036 TOW



M1045 TOW

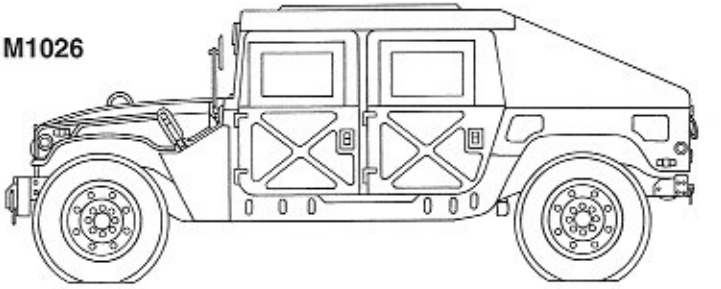


M1046 TOW

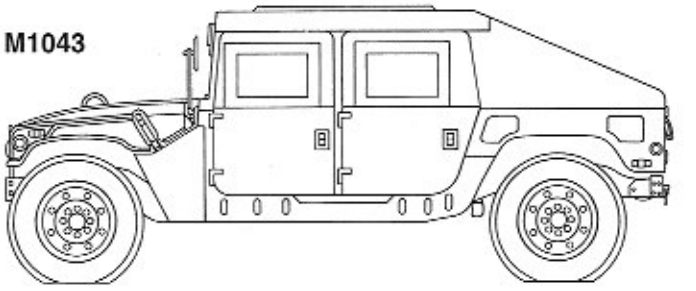


M1025

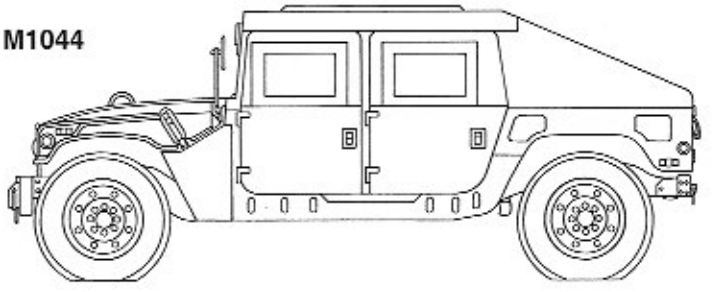
M1026



M1043



M1044

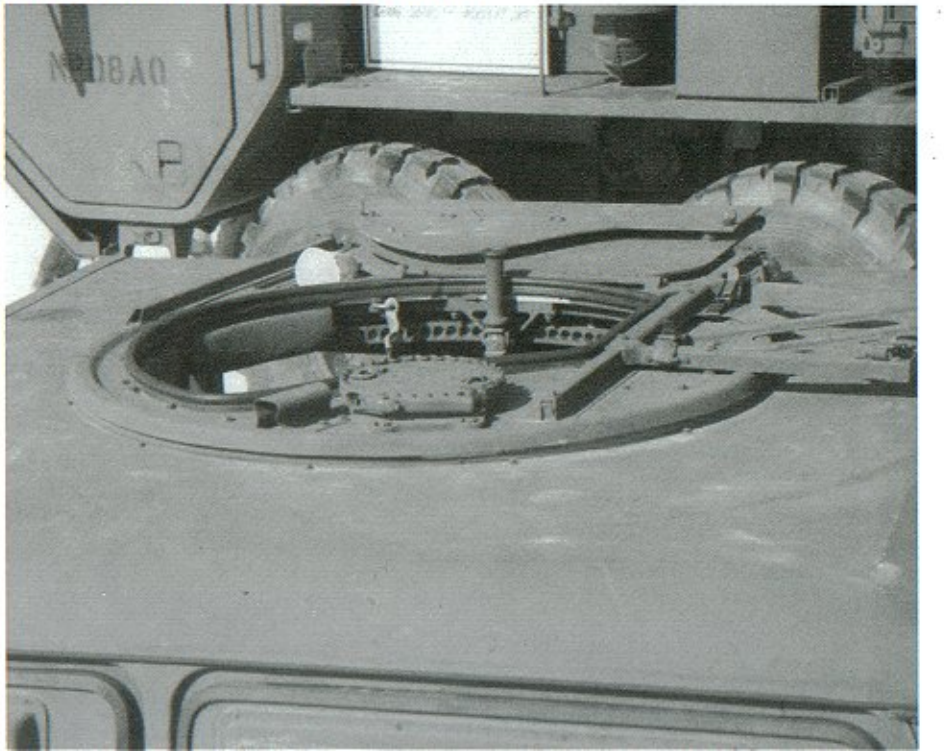


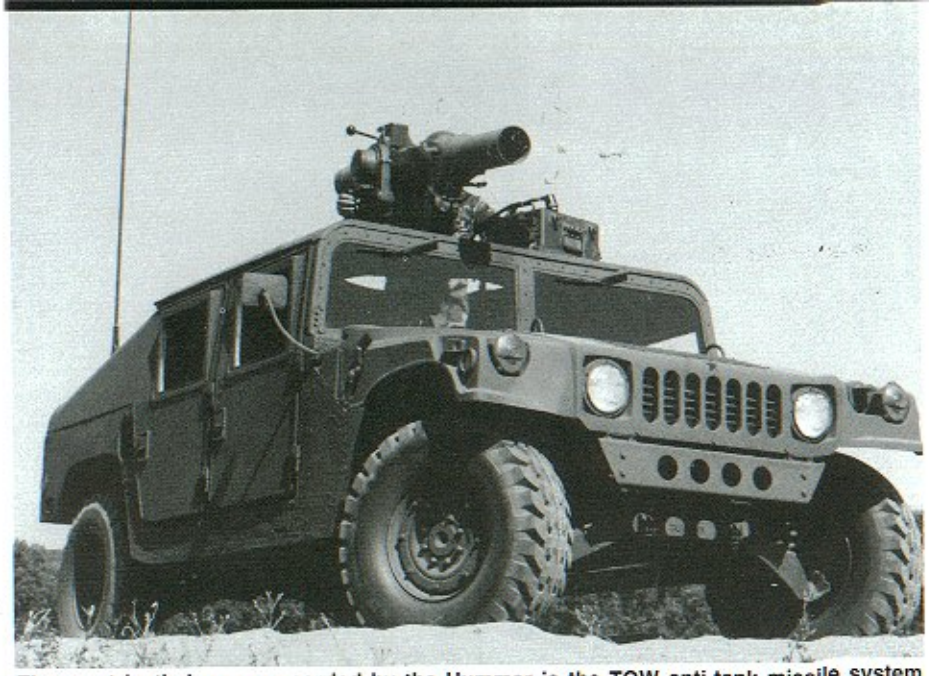
There are significant differences between the basic cargo-troop carrier Hummer and the armament carrier variant. The most noticeable are the solid metal doors, metal rear cover and weapons ring on the roof which can mount a variety of weapons.

The armament carrier can also be fitted with supplemental armor for increased protection. Vehicles which have this feature added are easily identified by the lack of the stamped "X" pattern on the doors (the plates cover over them). This particular vehicle is armed with a .50 caliber M2 machine gun on the weapons ring.

One of the more common weapons carried on the weapons ring of the Hummer is the M-60 7.62MM machine gun, which is the standard U.S. infantry light support automatic weapon. The M-60 can be easily dismounted for use as a ground mount if necessary. (Jerchel)

The armament ring can be fitted with a number of different weapons. This is the 36 inch TOW launcher weapons ring. The launcher unit fits on the circular mount in the foreground. The flap at the top of the ring folds over the opening for protection from the elements and light shrapnel. (Plough via Wagner)



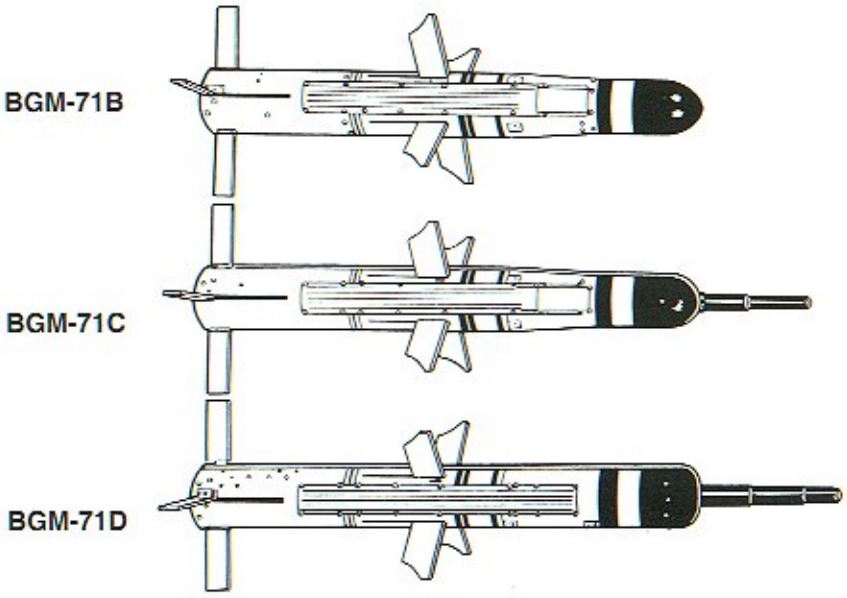


The most leathal weapon carried by the Hummer is the TOW anti-tank missile system which can be used to knock out armor and bunkers with its wire guided missile. The system may be dismounted for ground use and dug in, or it can be fired from the vehicle. (Army)

The rear compartment of the TOW armed Hummer is equipped to carry six TOW missiles in special racks. In addition, additional TOW missiles can be carried on the rear of the hatch. This is usually done only when the unit is moving from one location to another, when enemy action is not expected, since this makes it almost impossible to get the ready rounds out of the rear compartment. (Wagner)

The rear hatch is actually a double-actuated door which can be either lifted or pushed back depending on the situation. This allows easy access to the TOW rounds when in the firing position and doesn't require the crew to get out of the vehicle to reach them. (Wagner)

TOW Missiles



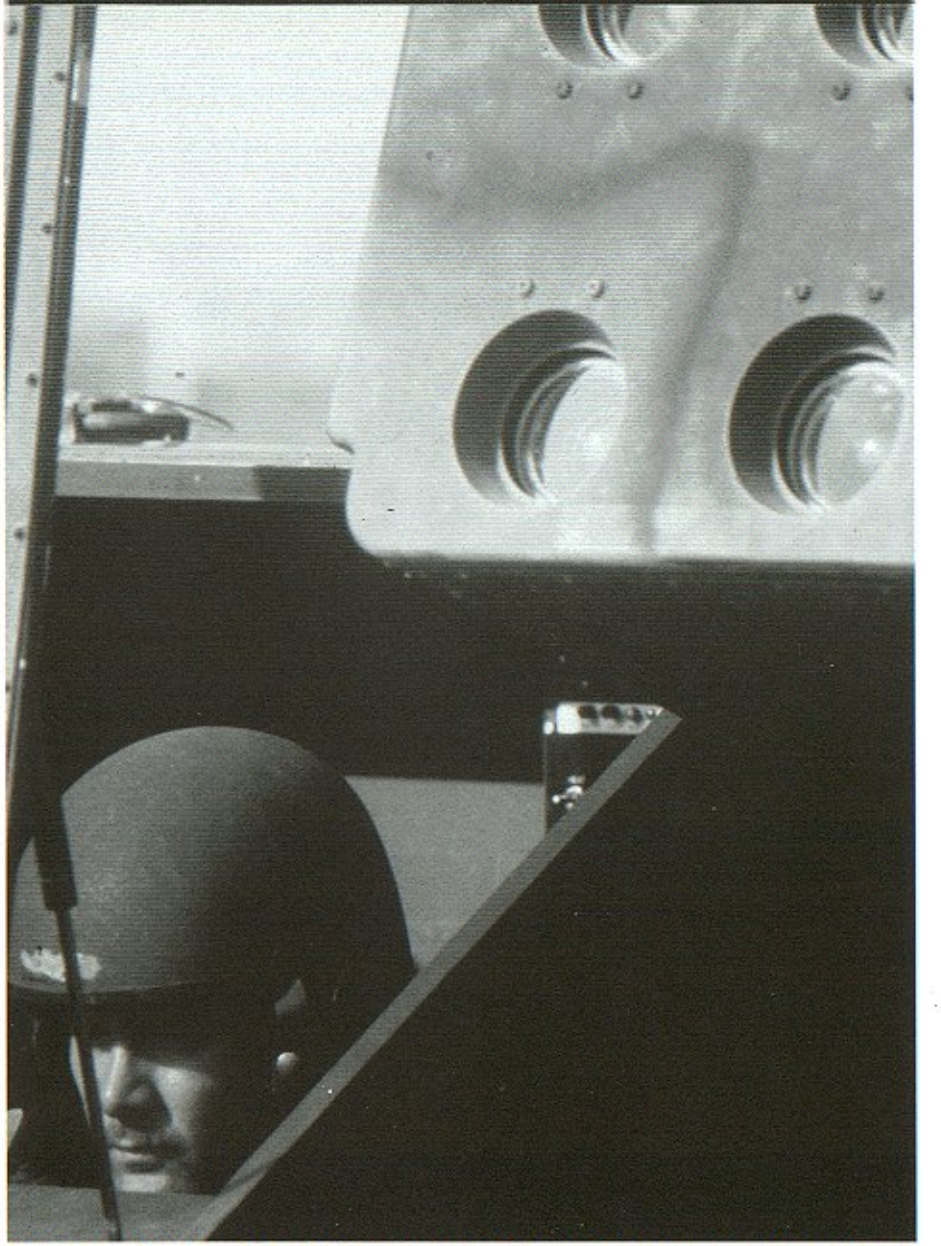
Stinger Vehicle

The Army had developed two models of the Hummer which use the Stinger anti-aircraft missile system. The Stinger is a heat seeking missile which may be fired from a mount or by an individual at low flying helicopters or aircraft. The missile comes in its own individual tube which requires no special maintenance. The Army took a standard M988 and fitted it with racks to hold eight missiles and additional radio equipment. The two man crew, a driver and gunner, accompany troops in the forward area and manually launch the missiles from standard shoulder launchers in case of an attack.

The other version, the Avenger, is based on the M1037 and has a launcher mounted in the cargo bed which carries eight Stingers and a .50 caliber machine gun. A gunner/operator sits in an enclosed position between the twin sets of missile launchers. This system, developed by Boeing Aerospace, has a fully integrated acquisition system capable of operating under all weather conditions. The Stingers can be launched either on the move, when stationary, or from a distance, using a remote control unit. This unit has done much to improve the effectiveness of the anti-aircraft defense artillery units which had been forced to use the old and outdated M163 Vulcan following the demise of the SGT York system.

The gunner in the enclosure operates the controls in a self contained environment which is climate controlled for all weather operations. Protection is also provided against small arms fire and shrapnel. Redundant power systems provide backup power in case of a failure in the primary power system. When the system is activated it takes less than fifteen seconds for the launcher and missiles to be ready for action. When in the launch mode, the missiles are able to be fired every five seconds. To reload the system, after all rounds have been fired, takes about four minutes. The Avenger can also be dismounted in order to be better dug in and camouflaged. All of this contributes to the system's versatility and it will probably be updated with new missiles and fire control systems to keep up with the latest in aircraft advances.

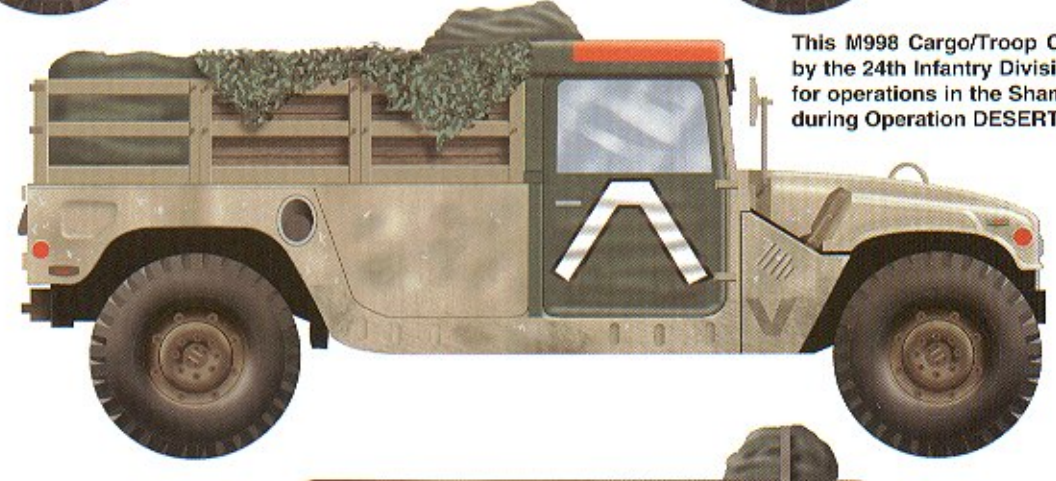
This Hummer has been fitted with a self-contained launcher unit for eight Stinger anti-aircraft missiles, which are mounted in groups of four on either side of the control module. Called the Avenger, it is mounted on the M1037 Shelter Carrier chassis and can also mount either one or two .50 caliber machine guns under the missile containers.(Army)



The operator or gunner sits in a control module located between the missile containers and has state-of- the-art equipment to locate and track his target in a climatized enivornment independent of the outside conditions. Firing can either be done from within the module or by remote control. Access is made through the blast resistant clear hatch. (Army)

A winter camouflaged M1046 of the U.S. Marine Corps during Operation COLD WINTER, a NATO exercise held in Norway during 1987.

An M1026 of the 82nd Military Police Company, 82nd Airborne Division in Panama City during December of 1989.



This M998 Cargo/Troop Carrier was used by the 24th Infantry Division (Mechanized) for operations in the Shama Desert of Iraq during Operation DESERT STORM.

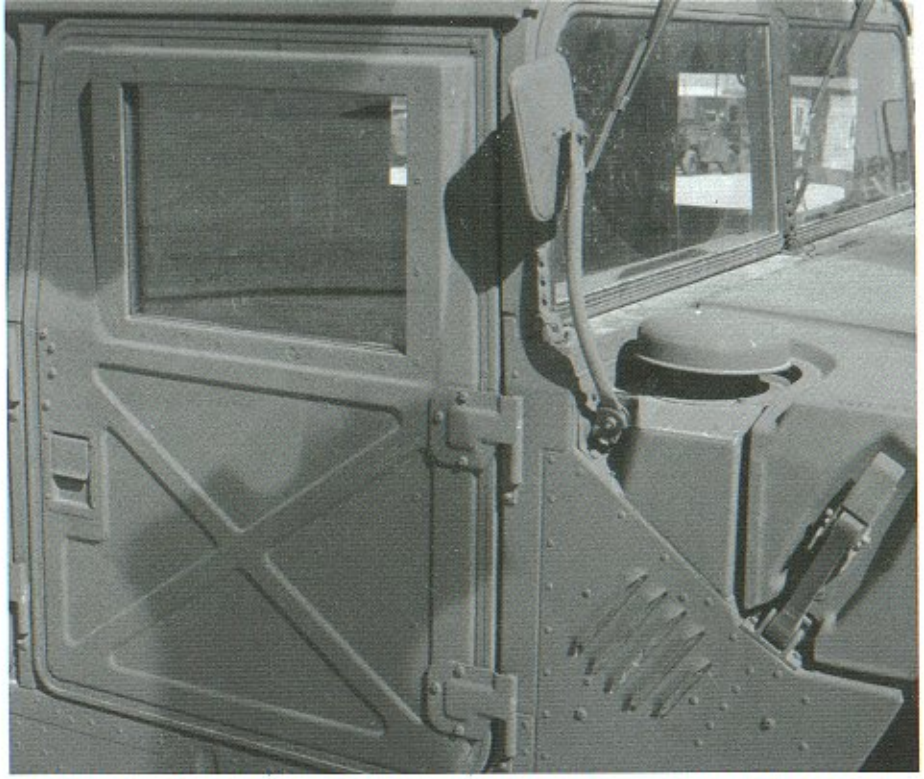
This M996 of 2/9 Cav, 7th Infantry Division (Light), Headquarters Element, was used as a Command and Communications vehicle at the National Training Center, Fort Irwin, California during 1990.

An M1043 of the 1st Tank Battalion, U.S. Marine Corps during a combined arms exercise at the Air Ground Combat Center, 29 Palms, California during February of 1889.

This M1025, of the 503rd MP Company, 3rd Armored Division in Germany for Operation CARAVAN GUARD in the Fall of 1989 carried the name TULSA in Black against a Tan background on the windshield frame.

A USAF M998 Communications vehicle attached to the 3rd Brigade, 3rd Infantry Division in Iraq during Operation DESERT STORM.

A VISMOD M1025 Armament Carrier modified to portray a BRDM-2 . The vehicle is attached to the 63rd Armor OPFOR (Opposing Force) at the National Training Center, Fort Irwin, California.

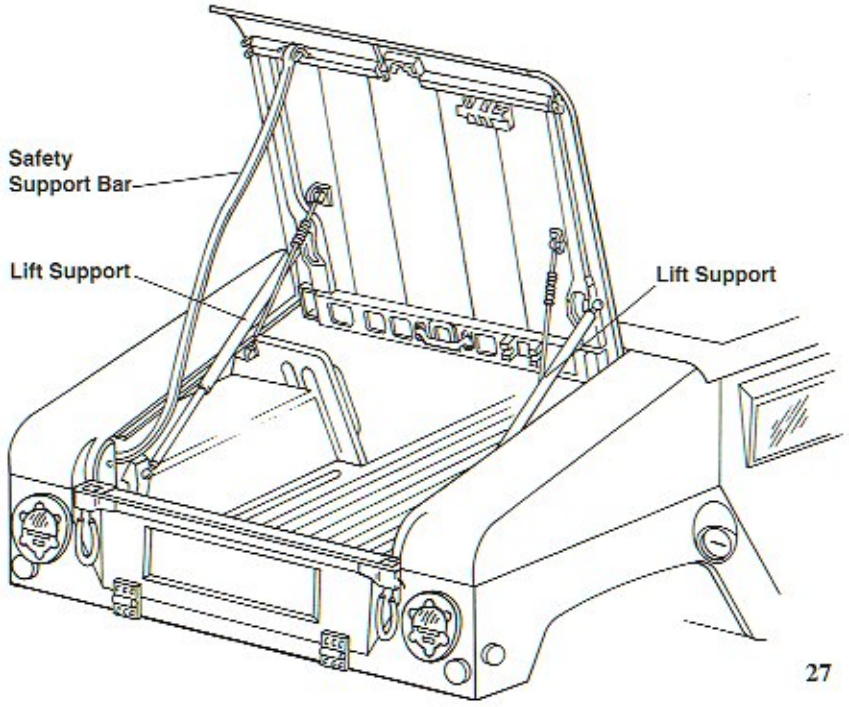


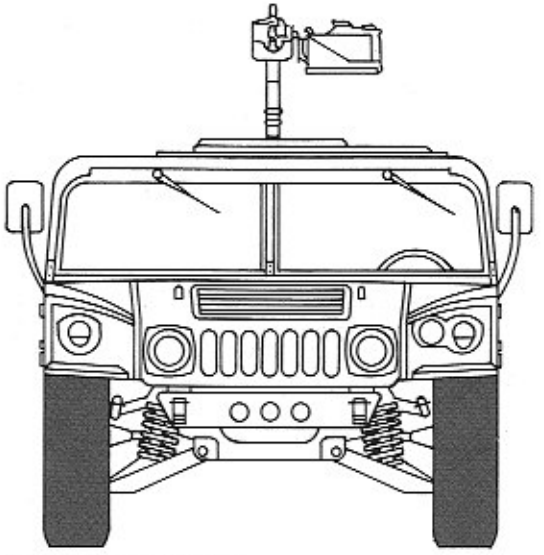
The solid door of the armament carrier differs greatly from the regular canvas door of the softskin version. The polycarbonate windows slide up and down and have a certain amount of resistance to shells and shrapnel.

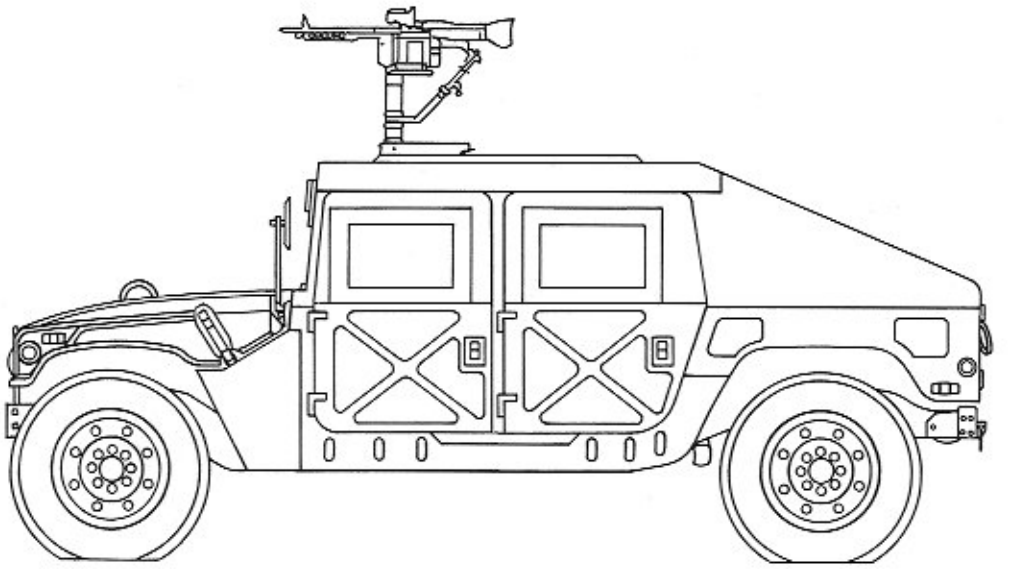
Another potent weapon which can be mounted on the weapons ring is the 40MM automatic grenade launcher which fires a variety of shells. The weapons ring is usually fitted with a universal weapons adapter which allows the easy changing of the various weapons systems. All weapons can traverse a complete 360 degrees.

This particular door has had the supplemental armor added over the base door with the X pattern of the original door visible behind the lowered window. (Wagner)

Cargo Compartment Hatch





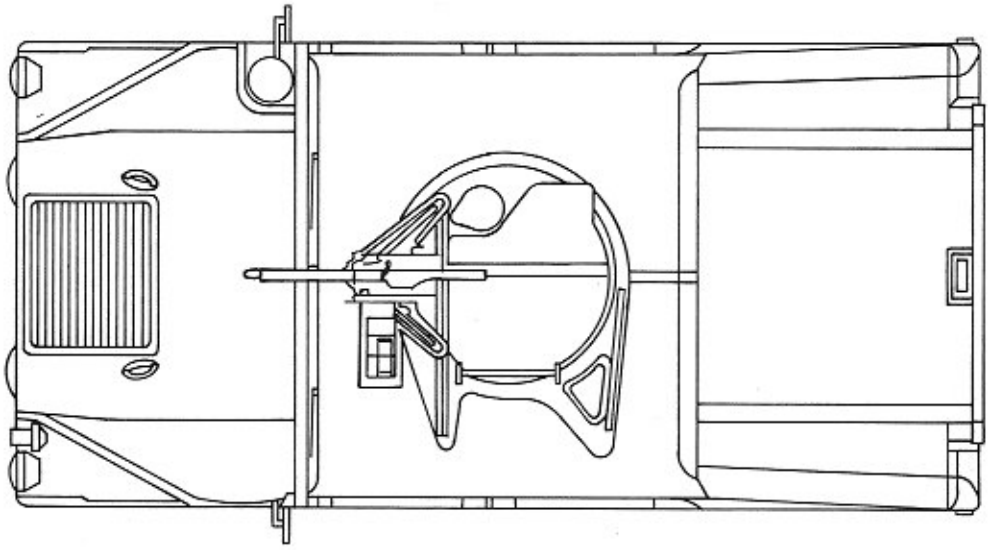


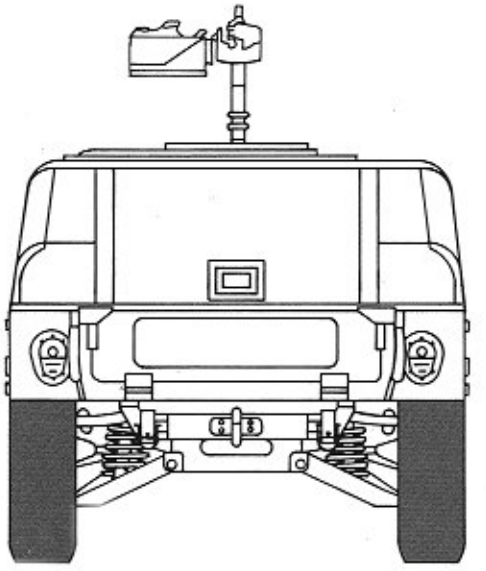
Specification

M1025 Armament Carrier

Length.....15 feet (4.58m)
Width.....7 feet (2.16 m)
Height.....6 feet 2 inches (1.88 m)
Empty Weight.....5,960 pounds (2,703 kg)
Maximum Weight.....8,200 pounds (3,720kg)

Powerplant.....One 150 hp V8 Diesel
Armament.....One M60 machine gun.
Speed.....65 mph (105 kph)
Range.....300 miles (482 km)
Crew.....Four





Research And Development Vehicles

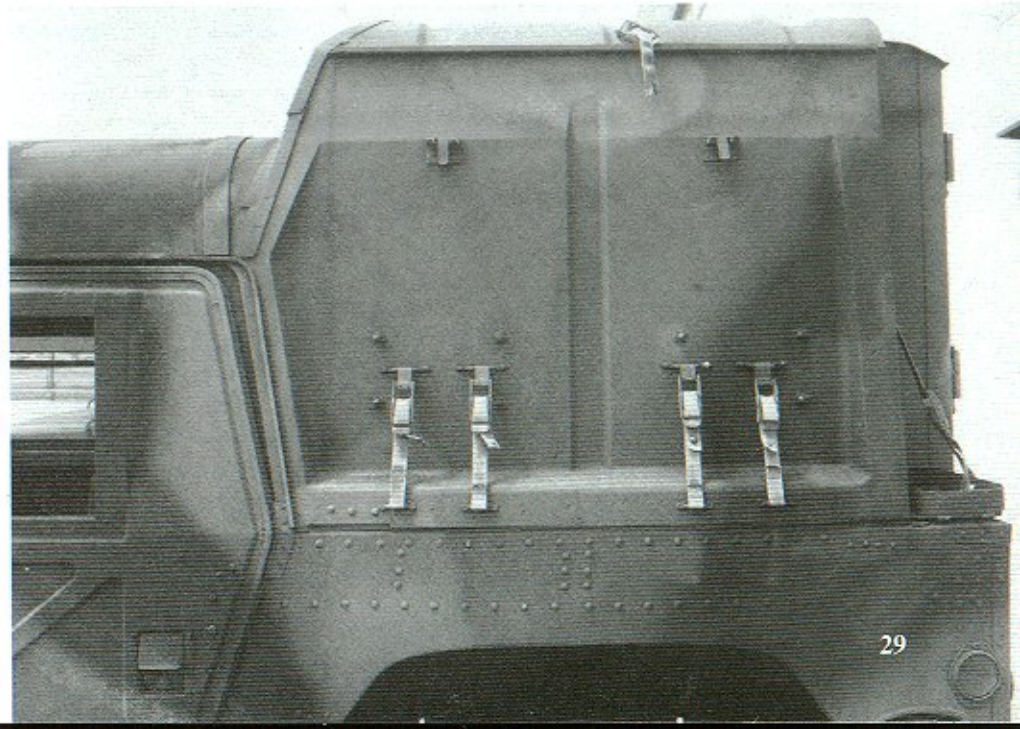
As with any new vehicle, there have been numerous proposals and prototypes built on the Hummer chassis which may or may not eventually see widespread service. There have been a number of modification kits made for the M998 Cargo/Troop Carrier which allow the vehicle to be fitted with a spare tire, additional Jerry cans and a variety of different armament. The armament options include a 7.62MM Minigun, 25MM cannon and 30MM cannon. There has also been preliminary work done on a Hummer Truck with a three person, over the engine, cab. The truck can be configured as a low bed, high bed, or flat bed. Using many components from the Heavy Hummer, these vehicles have done well on test courses and in durability checks. They may prove to be a useful addition to the Hummer line for both the military and civil markets.

The Heavy Hummer has also been modified with additional armor plates around the entire body. This modification provides a major improvement in ballistic protection for the vehicle, crew and cargo, although not without a significant jump in weight (the armor suite has been shown to be able to defeat up to 7.62MM rounds). A number of different armament configurations have also been tried on this vehicle, but it remains to be seen whether or not there will be a need for such a vehicle within the Army's equipment requirements.

There have been a number of vehicles exported to foreign customers and in all likelihood the main market for such an up-armored and up-armed Hummer might be Third World countries needing to upgrade their armed forces.

The Heavy Hummer is a armored variant of the standard armament carrier which has had the chassis upgraded to carry additional weight, in this case additional armor and a heavier weapon. This vehicle is basically an armored car fitted with a 30MM automatic cannon in a small turret on the roof top weapons ring. (AM General)

(Above/Below) An interesting variation of the standard Hummer was this one modified to carry a fully equipped ten man infantry squad. Although tested at the National Training Center, Fort Irwin, California, the vehicle did not meet with official approval and did not go into production. The extended rear cab had additional stowage points for the squad's extra gear along with extra racks for Jerry cans which were located at the rear above the fenders. (Wagner)



The squad armored Hummer was developed and tested at the National Training Center, Fort Irwin, California. The vehicle was armed with a M2 Browning .50 caliber machine gun on the weapons ring. This vehicle is loaded down with bed rolls and other personal gear.

An early attempt to provide the Hummer with a heavy hitting weapon was this vehicle armed with a 25MM electric drive remote controlled cannon turret. This was rejected by the Army for a number of reasons.

AM General has undertaken the development of a lightweight truck based on the Hummer chassis in both a high and low bed configuration. A number of different options are possible for these versions and both have undergone an extensive series of road tests.

This standard Hummer was fitted with a spare tire mounting and Jerry cans at the rear to provide additional flexibility for use in the field. It was armed with a 30MM automatic cannon mounted in a lightweight weapons station kit suspended on the built-in roll cage. (AM General)

(Right) Another version under developement is a remote-controlled Hummer fitted with sensors, multiple television cameras, and operated by remote control for use under a variety of hazardous conditions where a crew would be in danger.

Another weapons system being tested on the Hummer chassis is the LVT Crossbow pedestal mounted weapons systems. This system has the ability to be fitted with a variety of both anti-air and anti-armor missiles and weapons. (AM General)

(left) One feature of the Crossbow system which enhances its versatility is its modular design which allows the different weapons to be fitted with a minimum of changes to the basic system. In this test, a Hellfire anti-tank missile is fired from the vehicle.

Later, the same vehicle was fitted with 2.75 inch Hydra-70 unguided rockets fired from a standard aircraft pod. The gunner has a state-of-the-art tracking system which allows him to easily acquire a target. Many of the systems are automatic, which enables the gunner to perform his job with little chance of error. (AM General)

Civilian Hummers

During Operation DESERT STORM, the Hummer got its first widespread coverage by the news media and Americans across the country got their first glimpse, in many cases, of the vehicle. One person, who was so impressed by what he saw called AM General and asked about buying one. Well, normally such a call might have been dismissed out of hand by officials at the company, but when the man's name is Arnold Schwarzenegger, it's sort of a wise idea not to say no. This and other calls made AM General officials believe that there was a civil market for the Hummer, and during the Summer of 1991, the company began to take orders for the vehicle, with deliveries being scheduled for 1992.

AM General; however, was not able to take the military Hummer right off the assembly line and start selling it. While the basic Hummer body, engine, drive train, and chassis were kept, the interior was completely reworked with a padded dash, upholstery, steel doors, padded door panels, a twelve volt electrical system (Military Hummers use a 24 volt system), much more comfortable seats, outside lighting and markings to comply with Federal and State regulations and standards. Options include air conditioning, C.T.I.S., custom interiors, special sound and lighting packages and a host of other customer options. Four models were initially offered and currently these include a two passenger hard top ($46,550), a four passenger open canvas top ($48,500), a four passenger hard top ($49,950) and a four passenger wagon ($52,950). Neuman Marcus even offered a special reservation for the first 100 squared back Hummers to come off the assembly line.

Interestingly enough, the Hummer in civilian garb is not as strange as it first sounds. In comparison with other four wheel drive, off road vehicles, the Hummer makes an interesting contrast. One of the best of these vehicles is the Ford Explorer. This vehicle is actually longer than a Hummer, although the Hummer is nearly a foot wider and slightly higher. In highway driving performance, the Explorer has bet-

When first approached to market the Hummer on the civilian market AM General was a little skeptical of the idea but eventually decided to go with it. They then came up with a number of versions including the two door hard top (rear), four door hard top (middle) and four door canvas top. Not shown here is the four door wagons. (AM General)

ter acceleration, gas mileage, is quieter, and has a much more comfortable ride. Off road; however, is another matter. While the Explorer has good off road capability, the Hummer leaves it and every other such vehicle in its dust. As such, the Hummer is probably the vehicle for the really serious camper and off road warrior than the majority of people who use their vehicles for personal transportation. In this view, the rugged construction, high ground clearance and payload capability will find a ready market with companies whose business take them into rugged out of the way sites such as timber camps, oil wells, and various construction sites. While the Hummer will cost more than standard pick-up type vehicles, its versatility will probably far outweigh the cost when compared to what it can do.

In addition to the strictly civil market, there has been a good deal of interest in the non-military Hummer by other U.S. Government agencies, state and local governments, fire departments, and foreign countries due to its off road capabilities. Fire departments in particular have shown an interest in the Hummer in locals where they often have calls that require them to go off road. Airport fire departments especially have need for such a vehicle to reach crash sites which may be off the runway and a distance from access roads.

Red China was the first country to purchase the civilian Hummer, five being acquired for use in oil exploration work. Impressed with its performance, the Chinese government has shown a great deal of interest in purchasing a large number of both civil and military Hummer models. With the recent souring of U.S.-Chinese relations, this project has been given a very low priority by the U.S.

Perhaps the most unusual civil Hummers were two M1038 prototypes which were modified in 1990 to take part in a race sponsored by the Jules Verne Society from London to Peking. Fitted with a new GM gasoline enigma in place of the standard diesel, larger fuel tanks, and portable satellite communications systems for accurate navigation, these two Hummers took part in the grueling fifty-six day London to Peking Motor Challenge and came through with flying colors, another testament to the Hummer's overall capability.

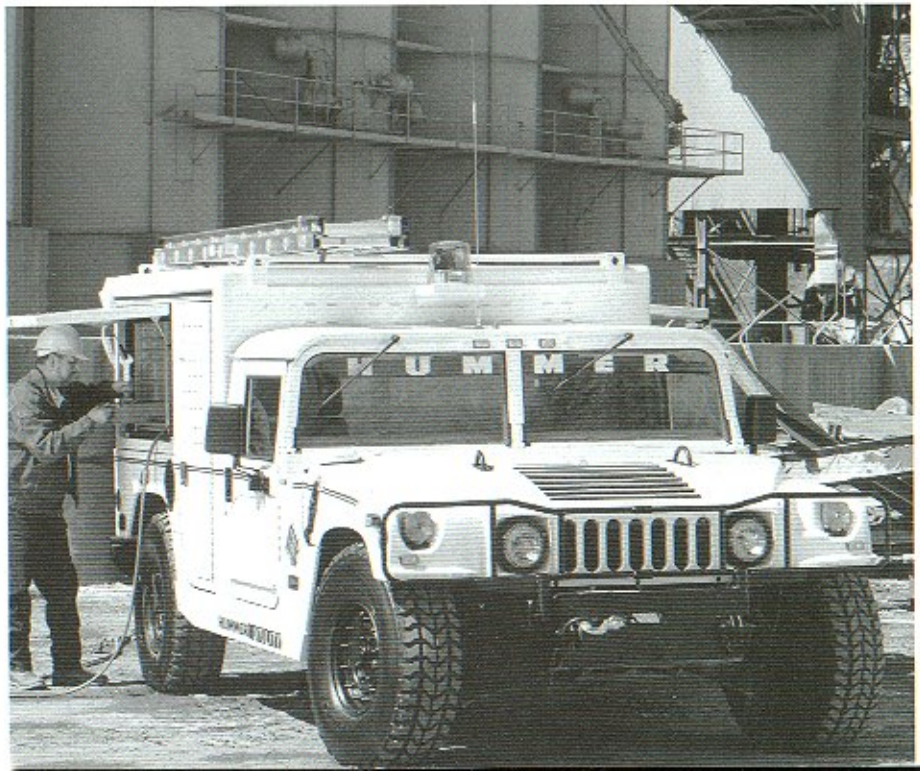
Looks can be deceiving since the Hummer is only about a foot wider than the Ford Explorer and fits easily into a standard parking place. This vehicle is a company demostrator used by the AM General Detroit offices. (Mesko)

Any similarity between the military Hummer and its civilian counterpart on the interior is purely accidental, as the civilian version has loads of options and creature comforts which the military would never have on theirs. While the civil Hummer is obviously far more comfortable than its military cousin, it still can't compete in this area with the more common four wheel drive type vehicles, and its high price will strictly limit those who can afford it. (AM General)

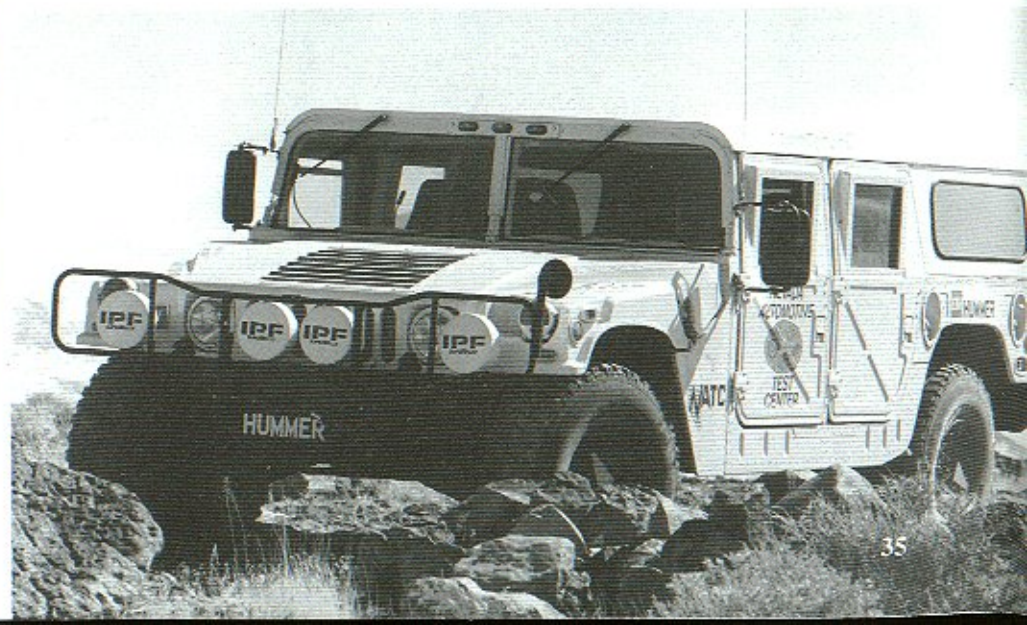
While the similarity between the military and civilian Hummer is evident, the most obvious difference is the doors. The civil version has doors that have been designed to meet Federal specifications for normal highway use. This vehicle is the four passenger canvas top and is actually shorter than the Ford Explorer. (Mesko)

(Right) The Salt Lake County Sheriffs office uses this overall White civil Hummer for off-road duties in the rugged countryside around Salt Lake City, Utah. The Hummer is a logical vehicle for law enforcement agencies and it is expected that it will become a common sight in police markings all over the country. (AM General)

Plans are in the works to market a utility version of the Hummer with a rear cab type structure based on the two passenger hard top. With its excellent off-road capability and load carrying performance the Hummer would be an ideal choice for the construction industry. (AM General)



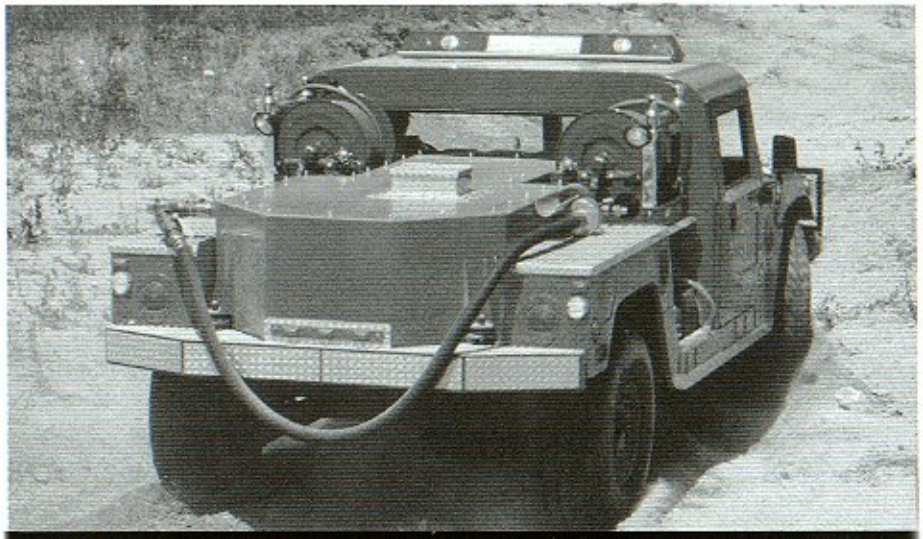
A specially modified Hummer was used in the London to Peking Motor Challenge organized by the Jules Vernes Society in 1990. The two Hummers used in this event did very well in the grueling fifty-six day trip. These Hummers were modified from M1038 prototypes and featured large fuel tanks and gasoline engines, along with sophisticated communications systems for pinpointing their exact location via satellite. (AM General)



Airport fire departments especially have need for a crash/rescue version of the Hummer that would enable them to reach crash sites which may be off the runway and a distance from access roads. This prototype vehicle was based on the ten man squad military vehicle that was tested at the NTC. The crash/rescue vehicle has flood lights mounted on the upper roof corners and is a fully equipped rescue unit. (AM General)

(Left) This civil Hummer construction vehicle has a crane mounted in the open rear bed and a winch on the front. The vehicle's rugged construction, high ground clearance and payload capability make it a good buy for companies whose business takes them into rugged out of the way sites such as timber camps, oil wells and other various construction sites. (AM General)

Fire departments in particular have shown an interest in the Hummer for use in locales where they often have calls that require them to go off road. The Hummer fire vehicle would be ideal for forest services in the western states that have annual fire seasons that usually result in several serious forest/brush fires, such as the fires that recently burned large areas of California, Idaho and Washington. (AM General)



(Left) The off-road Hummer fire fighting vehicle demostrates its ability to go through soft sand without becoming stuck. The four-wheel drive capability and good load carrying capability would make the Hummer an ideal choise for this type of fire fighting. This vehicle has been fitted with a water tank, pumps and two hose reels on either side of the cargo bed. (AM General)

In Service

Since its acceptance by the military in the mid-1980s, the Hummer, as become what the old Jeep used to be, a hard working, versatile vehicle which has been adopted for numerous roles. The first Hummers began reaching Army and Marine Corps units in the mid-1980s and were quickly phased into front-line units, replacing Jeeps and various other vehicles in use at that time. Reserve and National Guard units began to receive some Hummers during the late-1980s, but had to make do with only limited numbers of the new vehicles until the main force units were all re-equipped.

Aside from being used in various exercises in Europe and elsewhere, the Hummer first saw action in Operation JUST CAUSE, the invasion of Panama in December of 1989. Elements of the 82nd Airborne, 7th Infantry Division (Light) and Marine armor and infantry units, Navy SEALs and Air Force tactical aircraft were all involved in the invasion and many units were equipped with Hummers. Hummers proved exceedingly helpful in moving troops and equipment throughout Panama as U.S. forces suppressed the forces of General Manuel Noriega, the Panamanian leader and reputed drug czar. Due to the large amount of debris and broken glass on the streets, the ability of the Hummer to keep going despite holes which would have stopped other vehicles with flat tires, was greatly appreciated by their crews and occupants.

By the middle of the late 1980's the Hummer was becoming a common sight to many troops in the field as units began receiving them. This trio of cargo carriers are part of the 2nd Armor Division (Forward) which was taking part in Exercise CERTAIN STRIKE in the Fall of 1967, near the town of Osnabruelk, West Germany. The crew have stencilled their names on the windshields of their vehicles. (Jerchel)

MPs of the 720th Military Police Company take a break during Exercise CERTAIN STRIKE in their M1026, a basic armament carrier fitted with a front mounted winch. The Hummer is fitted with an M60 machine gun, the standard light automatic weapon in the U. S. military. (Jerchel)

Used for everything from cargo/troop carriers to prime mover and armament carrier, the Hummer came through this first combat test with flying colors.

Its next combat assignment was to be much more prolonged and thrust the Hummer into the public limelight. When the forces of Saddam Hussen invaded Kuwait in August of 1990, American ground forces were rushed to the scene by airlift. These forces were primarily elements of the 82nd and 101st Airborne Divisions, supported by elements of a Marine Expeditionary Force. Transportation in the Saudi Arabian desert was essential and due to its size and light weight, the Hummer was the main tactical vehicle initially deployed. Aside from a few Marine M60s and fifty-four M551 Sheridan light tanks, the only anti-tank protection the ground forces had at their disposal were TOW armed M966/M1036 Hummers. These were to oppose an estimated 5,000 tanks under Hussein's command until heavier Allied forces arrived.

For nearly two months, these units, backed by aircraft and helicopters were the sole ground defense against Iraq's huge army poised over the border in Kuwait. As additional U.S. forces deployed to Saudi Arabia, they brought with them not only heavy armor, but more Hummers. Eventually, practically every variant of the Hummer was deployed to the desert kingdom. News coverage on CNN and other major channels were constantly filled with pictures of Hummers and quickly, through news reports, magazine and newspaper articles, and video coverage, the Hummer became probably the most recognizable vehicle to the general public at large. Once the fighting began, it was much the same story. Perhaps one of the most widespread news reports of an early action was the battle of Khafji, which show U.S. Marines in support of Allied forces. One particular sequence showed a Hummer crew firing their .50 caliber machine gun from behind a wall at entrenched Iraqi troops. This film clip was shown and re-shown for a number of days due to its dramatic effect. When the full scale liberation of Kuwait began in late February of 1991, Hummers again were prominent in the news, although in all fairness, the M1 Abrams and M2 Bradleys did receive more press coverage. But always

The Hummer also began to enter U.S. Marine Corps service during this period. This version, the M1044 was fitted with both a front winch and supplemental armor and was armed with a .50 callber machine gun on the roof weapons ring. The Marines were part of a multinational force taking part in Exercise BRIGHT STAR In the Egyptlan desert during the Summer of 1987. (USMC)

in the background was the Hummer, being used in every conceivable role from troop carrier to anti-aircraft defense. When the lightning like offensive was over, and the armor was withdrawn, the Hummer still figured prominently in the news coverage. And well it should, for throughout the long months in the desert, the Hummer rarely let the troops down. Vehicles were subjected to the most trying environmental conditions and with only minimal maintenance performed magnificently in the harsh Saudi desert. Crews spoke with affection about their Hummers in ways which are sometimes hard to believe.

Operation DESERT STORM brought the Hummer to full maturity, and as the military acquires more and more of the rugged "little" vehicle, and undoubtedly the Hummer legend will continue to grow. While operations in the Near East were the most significant employment of the Hummer in a military role, the Hummer was also used in a little known campaign in Angola during the Spring of 1990. There a number of Hummers were used by the Western backed UNITA insurgents to held defeat an offensive by the Soviet supported MPLA government forces. While how many Hummers were employed or how they got there is currently unknown, it is known that included in the total were TOW and machine gun armed armament carriers, and at least one cargo carrier fitted with a captured Russian anti-aircraft gun in the rear cargo bed. What role these Hummers played in the one-sided victory by the insurgent forces over the much better equipped MPLA is also unknown, but the harsh and rugged African terrain where there are few good roads, was just the type of conditions that favor the Hummer and, in all probability, they gave a good account of themselves.

At the current time well over 100,000 Hummers have been produced, and all branches of the U.S. Armed Forces employ it in a wide variety of roles. Undoubtedly, other countries will also begin equipping their forces with the versatile Hummer, and at the present, the future for this rugged vehicle looks bright indeed. The legacy of the Jeep will continue to roll along with the Hummer, both a fitting tribute to the American automotive geniusThe following comments are an example of one crew's feeling about their Hummer named POISON IVY as related by SGT Cliff Ferrll of the 838th Military Police Company, Ohio National Guard,

Under less warm conditions a group of 9th Infantry Division Hummers armed with TOW missile launchers move down a road in Korea during Exercise TEAM SPIRIT V, the annual South Korean/U. S. war game in that divided country. A variety of things have been done to the Hummer to help camouflage it, including netting, rice straw, and it was smeared with mud. (Army)

Members of a mobile fire team from the 66th and 419th Air Police Squadrons deploy during a practice session at Sembach Air Base, West German in the Fall of 1983. Such quick reaction teams are a vital part of base defense and the Hummer has proved to be an excellant vehicle for use in this role. It is far more versatile than the older Jeep or military versions of civil pickup trucks. (USAF)

whose unit took part in Operation DESERT STORM and later in the repatriation of Iraqi POWs.

Poison Ivy was what we named our M998 HMMWV or Hummer. Her official bumper number was 838-33. During Operation Desert Storm SGT John Hissom, SP4 Vince Urichich and I pretty much called her home. We lived out of "Poison Ivy" for a little over six months. We slept, ate, bathed, shaved, laughed, cried, froze, sweat and were victorious in her. Poison Ivy was much more to us than just transportation, she was a member of our Combat Military Police fire team.

When we deployed to Desert Storm, "Poison Ivy" had less than 2,000 miles on her, when we returned she had been driven well over 30,000 miles. All of those miles were driven in one of the harshest environments on earth, yet "Poison Ivy" never let us down. Aside from a couple of flat tires and one sheared alternator bolt we had no mechanical problems at all. Poison Ivy took us from cosmopolitan Dehran to the desert, out to the oil fields, to Kuwait City and to Iraq, without complaining or ever giving up.

She had a personality all her own and she was tough! She even had her own personal kills, two cobras, one huge lizard, and a camel. She took it all in stride.

At the risk of sounding sentimental, when the unit returned to the U.S. we had to leave our Hummers, including Poison Ivy, in Saudi Arabia for a while longer. I felt like I was betraying her by leaving her there. After all, Poison Ivy had done her job and did it in an outstanding way. She should have come home with us, I missed her.

If ever there were a perfect vehicle built for the Combat Military Police, the Hummer is it. Fast, maneuverable, reliable to an almost unbelievable degree, tough and above all, they have heart. I would personally like to thank AM General for building such a fine vehicle. There have been only a few truly great motor vehicles built, the Hummer surely has to be included at the top of that list.

Poison Ivy finally did get to come home. In February of 1992 she arrived back in Austintown, Ohio at the 838th MP Company's armory. She was sporting a new hood (the camel kill had broken the original), new doors, windshield and tires. She looked pretty rough.

When we left Saudi Arabia we thought she looked good, but now she was showing the signs of what we had been through. The original paint was sun bleached and scratched, she had dings and nicks in her Kevlar body and the interior looked like three people had lived there for an extended period. But, when I started her up, she roared to life just like she always had. Even though she was faded, scarred and worn, Poison Ivy was still the tough old gal she had always been.

I have since retired from the National Guard. Every time I think about that grand lady, Poison Ivy, I get a lump in my throat and a tear in my eye. She meant a lot to me, she still does. Yes, I do still miss her, there will always be a soft spot in my heart for that chunk of Kevlar, steel and rubber. She had a heart that wouldn't give up.

SSG CLIFTON R FERRELL

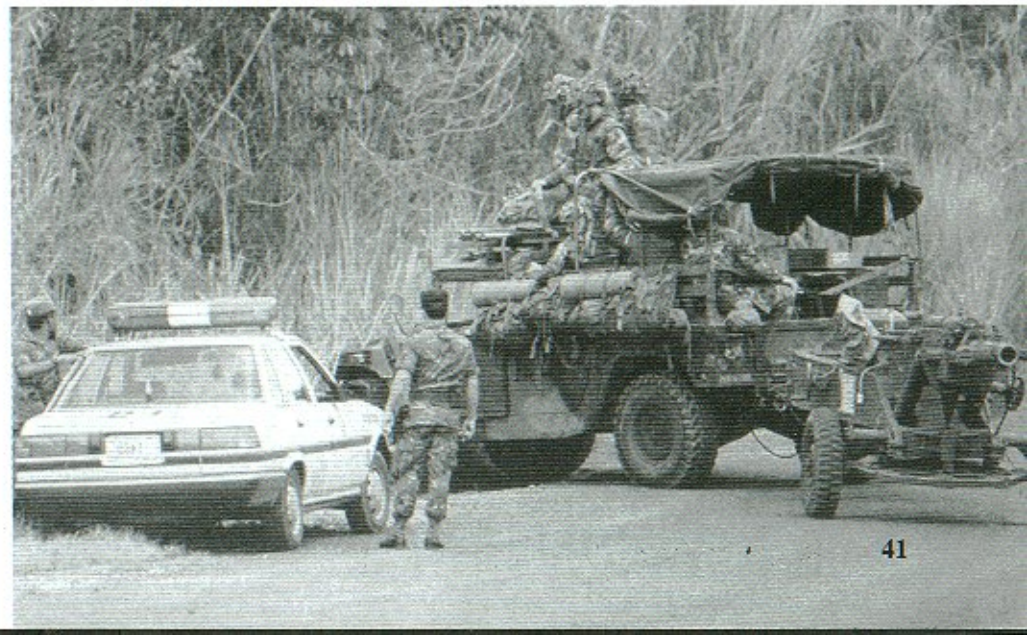
U.S. ARMY (RET)

This is a very glowing and interesting comment by a soldier whose "home" for nearly nine months was a Hummer. The vehicle served as home in some of the harshest conditions a soldier could face. Similar comments about the Hummer's ability to perform its job were voiced by troops from the enlisted ranks up to general officers, and these glowing accounts showed that the Hummer had more than adequately fulfilled its designers and procurers tasks.

A Marine Hummer takes part in a training exercise at Camp Pendleton, serving as part of a mobile patrol. Due to their amphibious assignments all Marine Corps Hummers are fitted with a permanent wading gear extension on their intake stack which is visible just below the .50 caliber machine gun. (USMC)

The crew of this Hummer prime mover, pulling an M102 105MM howitzer get directions from Panamanian Defense Force personnel on how to get to a firing range. Within a few months both of these forces would be locked in fighting when U.S. forces overthrew Panama's dictator, Manuel Noriega. (Army)

Due to light reflection of its windshield, Hummer crews are supposed to raise the hood when when the vehicle is to be parked out in the open for any length of time. This will cut down on the chances of this happening due to the way the hood blocks the line of sight. (Jerchel)



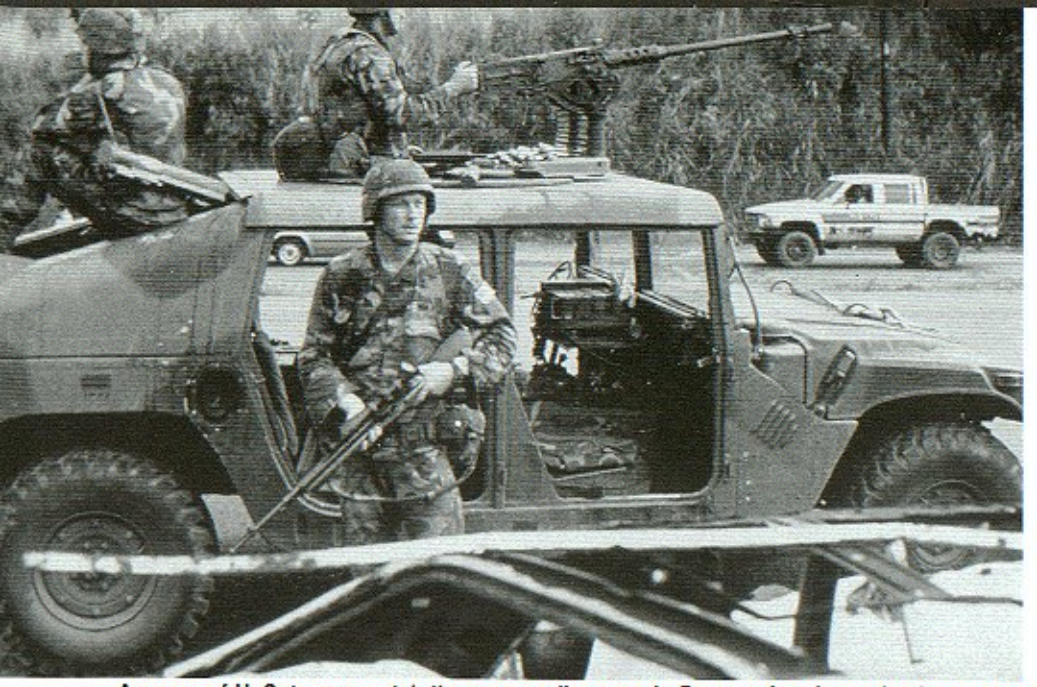
MPs from the 3rd Armor Division scan the terrain during Exercise CARAVAN GUARD in September of 1989. The MP at the rear has just climbed out of the rear hatch which can be opened in either direction. The men are from the 503rd Military Police Company. (Jerchel)

Members of the 130th Engineer Battalion prepare to move out of a German town during a rainy afternoon while taking part in Exercise CARAVAN GUARD. These are the standard cargo Hummers fitted out as pick-up trucks with wooden side slats. (Jerchel)

Not all Hummer work was strictly military. During the Fall of 1989 U.S. military units were sent to the Island of St. Croix in the wake of hurricane Hugo to provide relief for the devestated island and its residents. This obviously happy resident talks with two U. S, MPs as the island slowly got things under control. (Army)

A Marine from the 11th Marine Expeditionary Unit (11th MEU) runs past a Hummer armament carrier fitted with a 40MM grenade launcher. Directly behind him is the extended air intake pipe, while on the other side of the vehicle is the extended deep water exhaust pipe extension.

When Manuel Noriaga pushed his luck too far, President Bush ordered U. S. forces to capture him in Operation JUST CAUSE during December of 1989. Due to their light weight and ease of air transport, a large number of Hummers were prepositioned in Panama to help in the operation. A group of Rangers guard an intersection in Panama City after American forces had seized control of it. (Army)



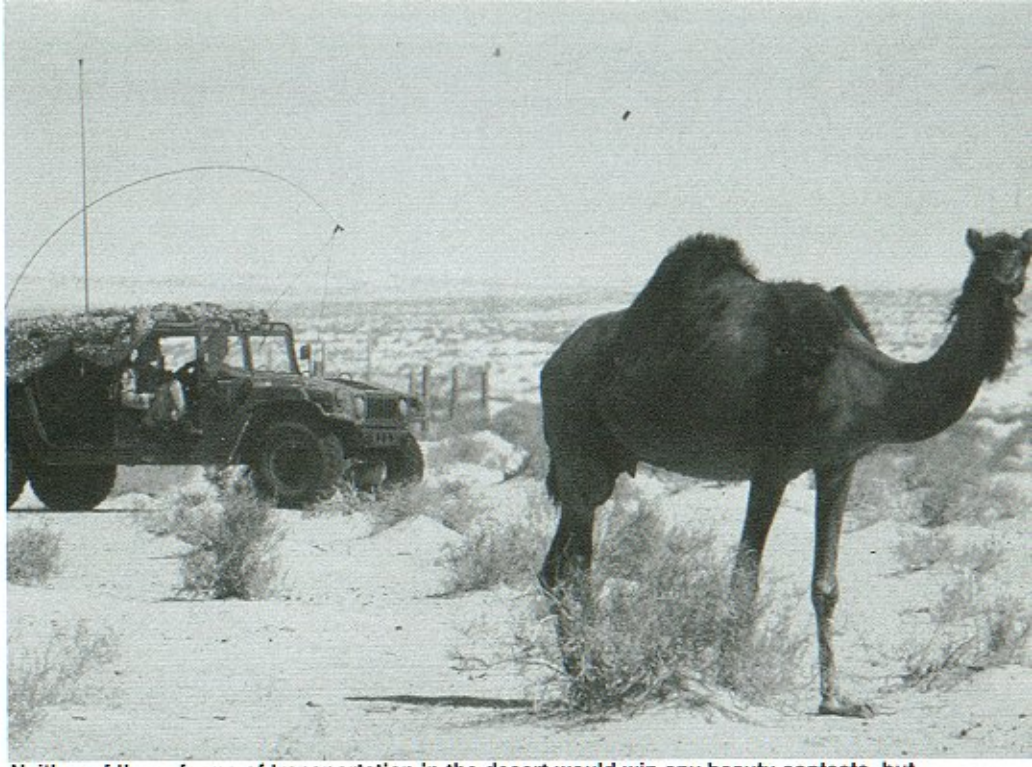
A group of U. S. troops watch the surrounding area in Panama for signs of snipers after the end of hostilities. The soldier in the center is equipped with a specially outfitted sniper rifle and scope. (Army)

Mobile patrols helped keep problems to a minimum after the initial fighting as the sight of well armed American soldiers and Marines deterred all but the most die-hard of Noriega's supporters from interferring with the U. S. forces The crew of this Hummer have removed all its doors and rear hatch for easy access and air flow in the hot, humid climate. (Army)

A MP in full battle dress carefully watches at an intersection for signs of trouble with his M60 machine gun within easy reach. The ring mount can be traversed a full 360 degrees. The flat object beside him is the folding hatch which is in two sections. (Army)

The crew of this artillery unit has just unhitched their 105MM howitzer and are moving it into position for a firing mission during an exercise at the National Training Center, Fort Irwin, California. Their prime mover has a large amount of gear stowed on the outside of the vehicle. Additionally, the doors have been removed for better ventilation. (Stewart)

When Saddam Hussein invaded Kuwait in the late Summer of 1990, the U. S. quickly rushed Marine and airborne ground units to bolster Saudi Arabia against this blatant aggression. Until the arrival of heavy armor, one of the main defensive weapons the ground forces had at their disposal against Iraqi tanks were TOW armed Hummers, along with a few Sheridans and M60. Paratroopers of the 82nd Airborne await orders to move out with their TOW Hummers which have additional TOW missiles in the wooden cases strapped on their rear hatches. (USAF via Bishop/Cole)



Neither of these forms of transportation in the desert would win any beauty contests, but neither can be equaled when it comes to reliability and their ability to traverse all types of terrain. The Hummer proved itself to be an outstanding performer in the desert and became the best recognized U. S. military vehicle of the conflict. (USAF via Bishop/Cole)

A Sand colored Avenger of the 1st Cav is unloaded at a port in Saudi Arabia during the buildup of U.S. forces in the Fall of 1990. Eventually all variants of the Hummer would see service with U. S. forces during the conflict. (Army)

To provide a deterrent against the Iraqi armored juggernaught, large numbers of U. S. aircraft were flown into Saudi Arabian airfields to provide tactical support. To protest these high risk targets from sabotage, MP units constantly patrolled the perimeters and the parking areas. (USAF via Bishop/Cole)

A Marine Hummer, armed with a .50 caliber machine gun, sits in the hot desert sun during a break in a patrol. The lack of a recognition inverted "V" marking and the neat paint job indicates that this was during the early stages of the buildup. (USN)

To combat the intense heat, the crew of this Hummer rigged a sun screen on top of their vehicle using poles and the rear hatch. This MP unit, the 503rd, was based in Europe with the 3rd Armor Division and earlier it took part in Exercise CARAVAN GUARD.(USAF via Bishop/Cole)

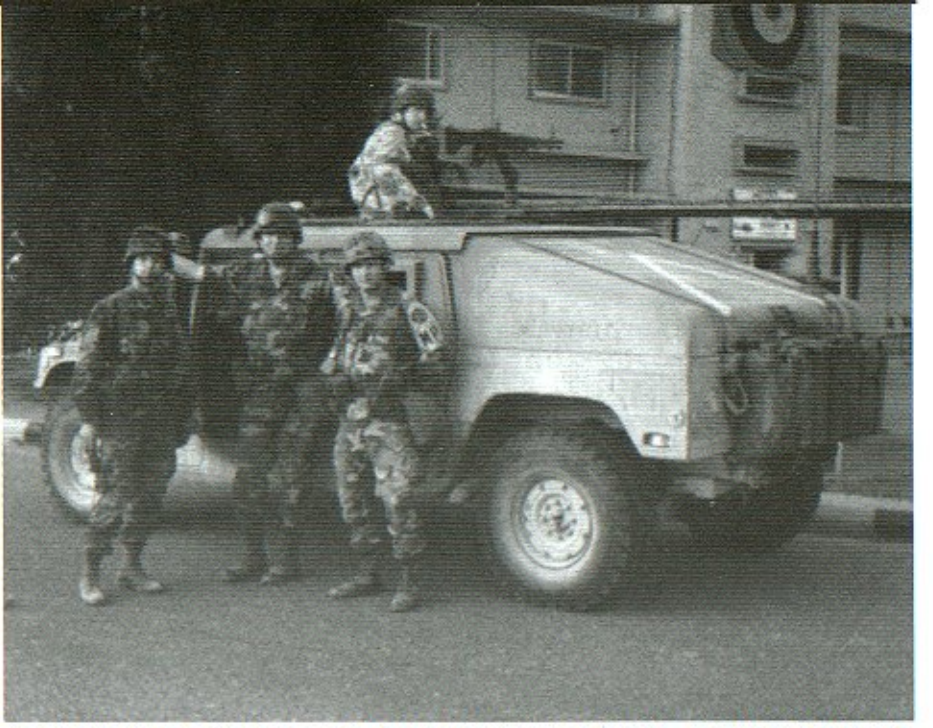
Many Hummer arrived in the desert painted in the standard European camouflage scheme which made them stick out like a sore thumb in the desert. The crew of this cargo carrier have applied either a hasty coat of paint or mud to break up the dark European camouflage scheme. While this vehicle is towing a 105MM artillery piece, it is not a prime mover version since it does not have the overhead rack.(Army)

An Avenger anti-aircraft vehicle sits near the port facilities in Saudi Arabia during the early stages of Operation DESERT SHIELD. Due to the massive numbers and quality of the Allied air forces the Iraqis never seriously threatened the multinational force and the Avengers never were needed.(Army)

Marine armament carriers move out into the desert on a patrol prior to the start of Operation DESERT STORM. The vehicle in the foreground is armed with a 40MM grenade launcher while the ones in the background has a .50 caliber machine gun. Such patrols helped acclimate the troops to desert conditions and kept a watchful eye out for any signs of Iraqi intrusions. (USMC)

Poison Ivy, the Hummer featured on the cover, moves up to the front just prior to the start of Operation DESERT STORM. At this stage she has not had her personal markings added to the hood and roof edge. (Ferrell)

When the land war started thousands of Hummers transported men and material into Kuwait and Iraq behind the armored spearhead. These heavily ladened armament carriers and their crews await orders for the final thrust into Iraq. The amount and various types of gear carried on these vehicles is impressive and shows that in war the American fighting man carries literally everything but the kitchen sink. (Army)



Poison Ivy at the end of the road, Kuwait International Airport. Sergeant Cliff Ferrell, whose glowing account of Poison Ivy, is included in the text is in the middle of the group. Eventually *Poison Ivy* came home to Ohio and today still serves with her MP unit. (Ferrell)

Well worn Hummers of the XVIII Airborne Corps sit awaiting departure from the war zone for the long flight back to Fort Bragg. The scruffy condition of the vehicles shows the rough usage they received and once back stateside they will be refurbished and completely repainted.(Army via XVIII Airborne Corps)

A Maxi-Ambulance sits under trees and a camouflage net during an exercise at the NTC in California. The red cross markings on the side make concealment difficult but when stationary camouflage procedures can reduce such high visibility markings significantly.

A number of Hummers were shipped to the pro-Western insurgent forces, UNITA, in Angola and these were used successfully against the Soviet backed government troops. At least nine Hummer variants are visible in this victory parade in Jamaba in mid-1990. The total number of vehicles sent to the UNITA is unknown at this time. (Free Angola Information Service via Museum Ordnance Collection)

The Hummer in the foreground has a 106MM recoilless rifle mounted in the rear and leads a group of TOW armament carriers during the victory celebration. The rugged terrain of the Angolan countryside was custom made for the Hummer's off-road capability and in all probability the vehicles received by the UNITA forces performed very well. (Free Angola Information Service via the Museum Ordnance Collection)

The Hummer on the left has been modified to accept a Russian anti-aircraft gun. A number of such ad hoc modifications were made by the UNITA forces. (Free Angola Information Service via Museum Ordnance Collection)

U.S. Armored Vehicles

From

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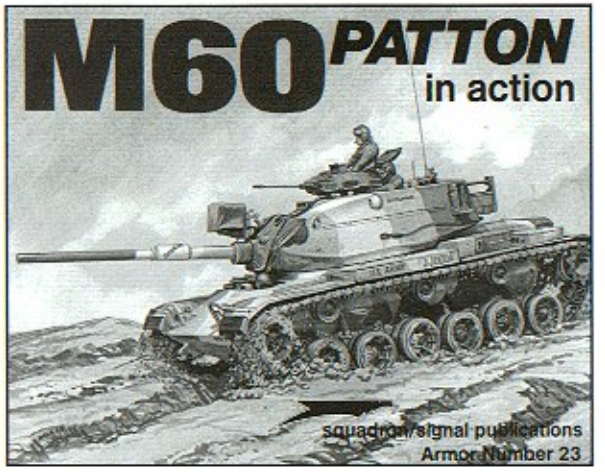

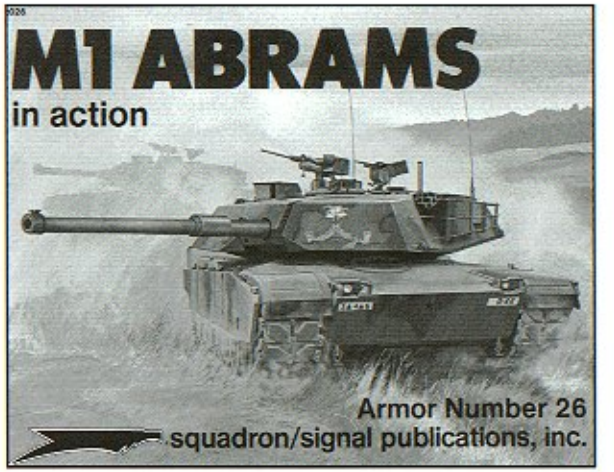

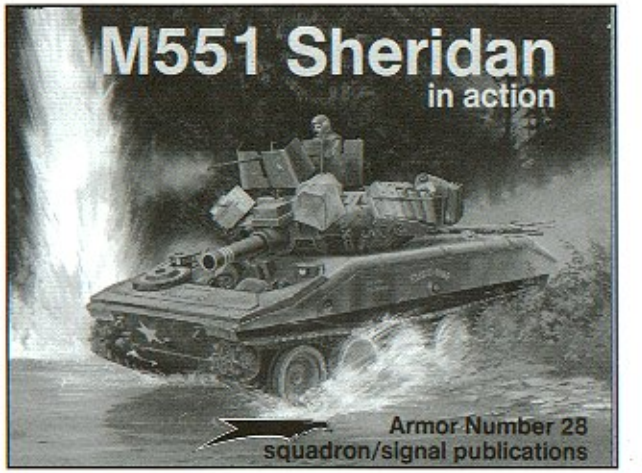

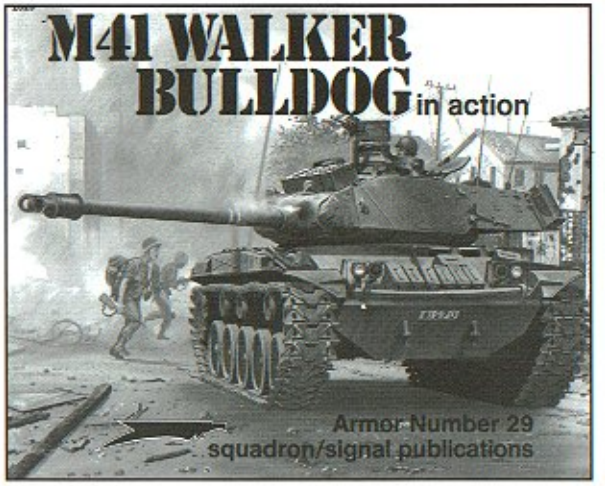

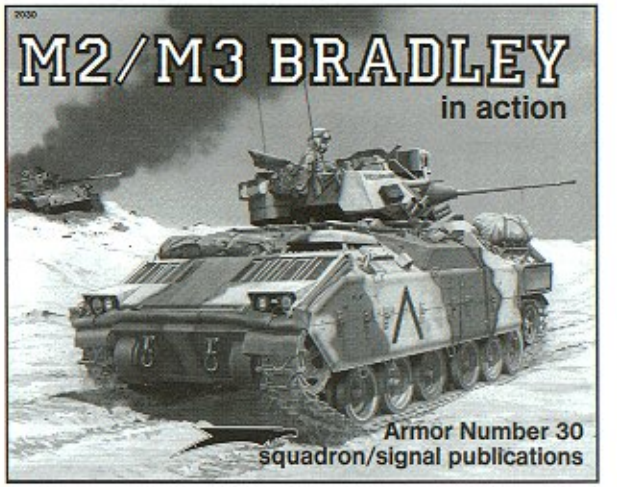

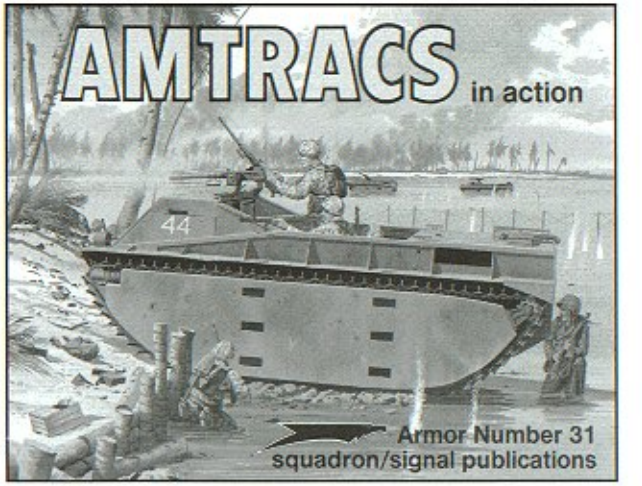

A TOW missile armed M966 of the 9th Infantry Division crests a ridge during Operation TEAM SPIRIT 88. TEAM SPIRIT is the annual joint exercise held in South Korea.

An M1038 of the 3rd Armored Cavalry Regiment during tactical training exercises at the National Training Center, Fort Irwin, California.

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